

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

1.96
R31FSO
Copy 2



U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

APR 13 1968

CURRENT SERIAL RECORDS
**WATER SUPPLY OUTLOOK
FOR
OREGON**

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE

and

OREGON STATE UNIVERSITY

and

STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above
in cooperation with other Federal, State and private organizations.

AS OF
APR. 1, 1968

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

D. A. WILLIAMS, Administrator

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 507, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85205
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	P. O. Box 38, Boise, Idaho 83707
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Building, Salt Lake City, Utah 84111
Washington	360 Federal Office Building, Spokane, Washington 99201
Wyoming	P. O. Box 340, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR OREGON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued

APRIL 8, 1968

Issued by

D.A. WILLIAMS

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.



Released by

A.J. WEBBER

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
PORTLAND, OREGON

In Cooperation with

G. BURTON WOOD

DIRECTOR
OREGON AGRICULTURAL
EXPERIMENT STATION

CHRIS L. WHEELER

STATE ENGINEER
STATE OF OREGON



Report prepared by

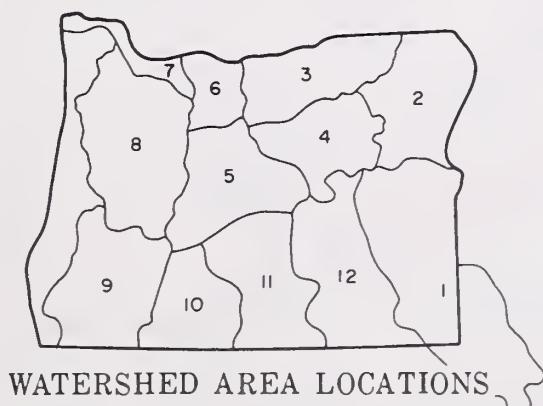
W.T. FROST, Snow Survey Supervisor
and

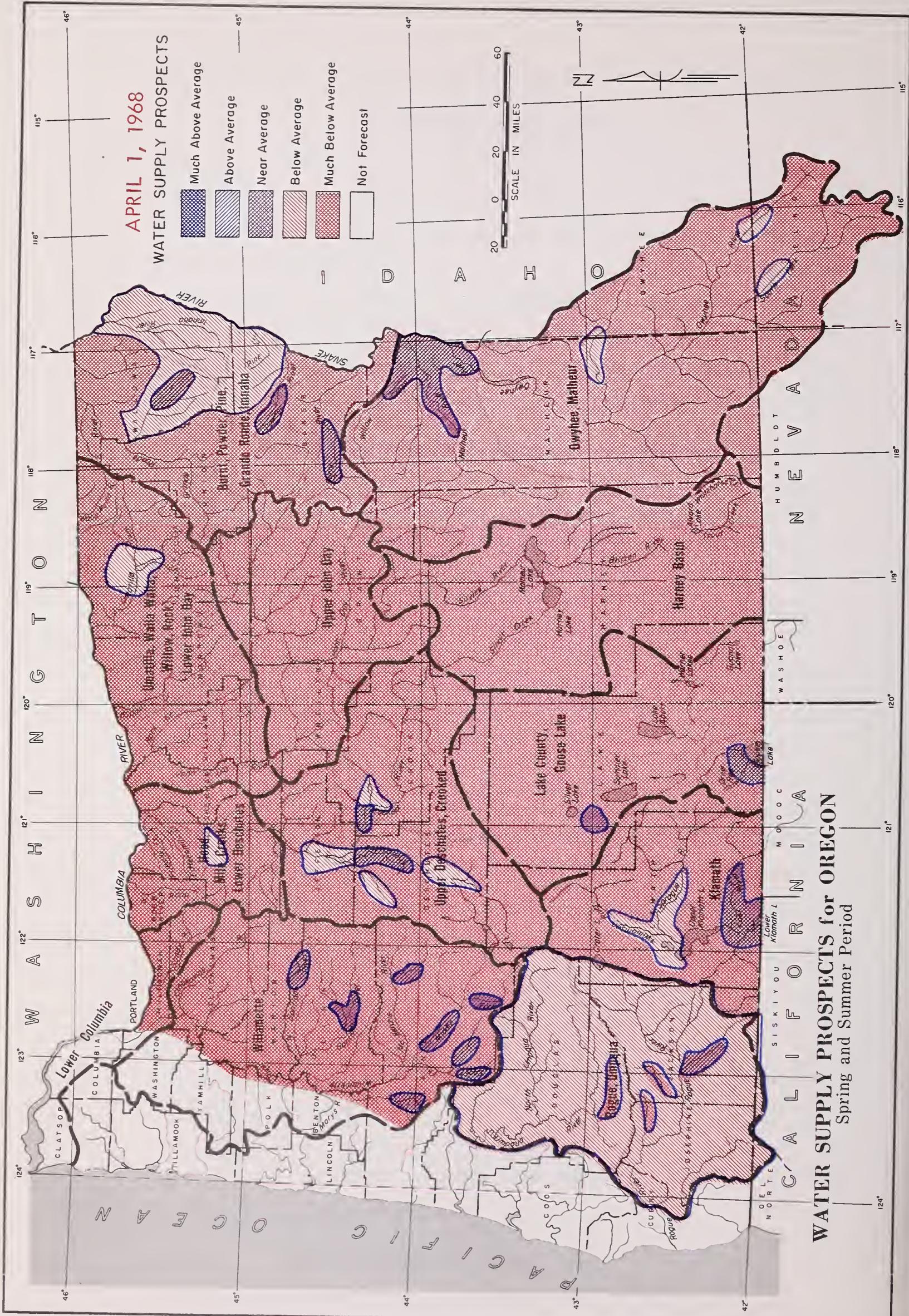
TOMMY A. GEORGE, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE
1218 S WASHINGTON ST
PORTLAND, OREGON 97205

TABLE OF CONTENTS

	PAGE
WATER SUPPLY PROSPECTS FOR OREGON.....(MAP).....	FACING PAGE 1
WATER SUPPLY OUTLOOK FOR OREGON.....	1
AUTOMATIC SNOW STATIONS.....	3, 4, 5 AND 6
STORAGE STATUS OF OREGON RESERVOIRS.....(MAP).....	7
MOUNTAIN SOIL MOISTURE IN OREGON.....(MAP).....	8
VALLEY PRECIPITATION IN OREGON.....(MAP AND TABLE).....	9
CURRENT OREGON STREAMFLOW.....(GRAPH).....	10
DETAILED WATER SUPPLY OUTLOOK BY MAJOR WATERSHED AREAS	
OWYHEE, MALHEUR.....	AREA 1
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA.....	AREA 2
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY.....	AREA 3
UPPER JOHN DAY.....	AREA 4
UPPER DESCHUTES, CROOKED.....	AREA 5
HOOD, MILE CREEKS, LOWER DESCHUTES.....	AREA 6
LOWER COLUMBIA.....	AREA 7
WILLAMETTE.....	AREA 8
ROGUE, UMPQUA.....	AREA 9
KLAMATH.....	AREA 10
LAKE COUNTY, GOOSE LAKE.....	AREA 11
HARNEY BASIN.....	AREA 12
PREVIOUSLY UNPUBLISHED AND ERRATA SNOW DATA.....	APPENDIX
MAP AND INDEX OF OREGON SNOW COURSES.....(MAP)	
LIST OF COOPERATORS.....	INSIDE BACK COVER





WATER SUPPLY OUTLOOK for OREGON

April 1, 1968

Forecasts of near record-low streamflow for much of Oregon in the summer of 1968 foreshadow a season of extremely short water supplies for most lands except those with stored water available and adequate. Most lands dependent upon diversion from natural streamflow will probably have only one irrigation at best--some lands will have no irrigation. Winter precipitation has been about two-thirds of the average and mountain snowpacks vary from only half of the usual amount to as low as only one-tenth the average. Reservoired water supplies are mostly adequate to carry the lands they serve through a reasonably good season.

PRECIPITATION

Statewide, March precipitation was very short, averaging about 43 percent of the usual. Winter precipitation, November through March, as reported by the U. S. Weather Bureau, averaged 73 to 90 percent west of the Cascades and in northeastern Oregon. Lowest amounts occurred in a north to south band in Central Oregon and were 58 to 63 percent of the average.

SNOW COVER

Water content of the nearly record-low snowpack is half of the usual amount in the extreme northeast and southeast corners of the state. Elsewhere the snow is even poorer with the poorest amounts, reported at only 10 to 20 percent average, in a north to south area including the Walla Walla, Umatilla, John Day, Crooked, Silvies and Owyhee River watersheds.

SOIL MOISTURE

Moisture in the soils under the mountain snowpacks and at lower elevations has increased favorably. Some cultivated soils in eastern and north-central Oregon have been penetrated with moisture only one and a half to two feet and are in need of much more moisture.

RESERVOIR STORAGE

Stored water supplies held in 25 Oregon irrigation reservoirs on April first totals 2,107,400 acre feet or 98 percent of the 15-year average for this date. Inflow to reservoirs was unusually good in February but has been much below average in March.

continued on next page

continued--

Some serious water shortages are probable for most lands served from Antelope reservoir in Malheur County, McKay in Umatilla County, Wickiup and Crane Prairie in Deschutes County, Wasco reservoir in Wasco County, Fish Lake and Fourmile Lake in Jackson County and Ochoco reservoir in Crook County.

There is a strong possibility of water shortages for lands served from Willow Creek reservoir in Malheur County, Cold Springs in Umatilla County and Thompson Valley reservoir in Lake County.

Water supplies forecast for the Warmsprings and Vale Oregon Irrigation Districts in Malheur County are dangerously close to the point of shortages.

STREAMFLOW

Flow of all Oregon streams in the summer of 1968 is expected to be far below the average flows and in many cases will approach the record-low flows of the driest years. Most streams are forecast between lows of 12 and 14 percent up to about 65 percent of the 15-year average (1948-62). A few streams heading in the Wallowa Mountains will flow about 75 and 85 percent average.

Many small Eastern Oregon streams have already completed their flows for the year unless unusually good precipitation is received in the near future.

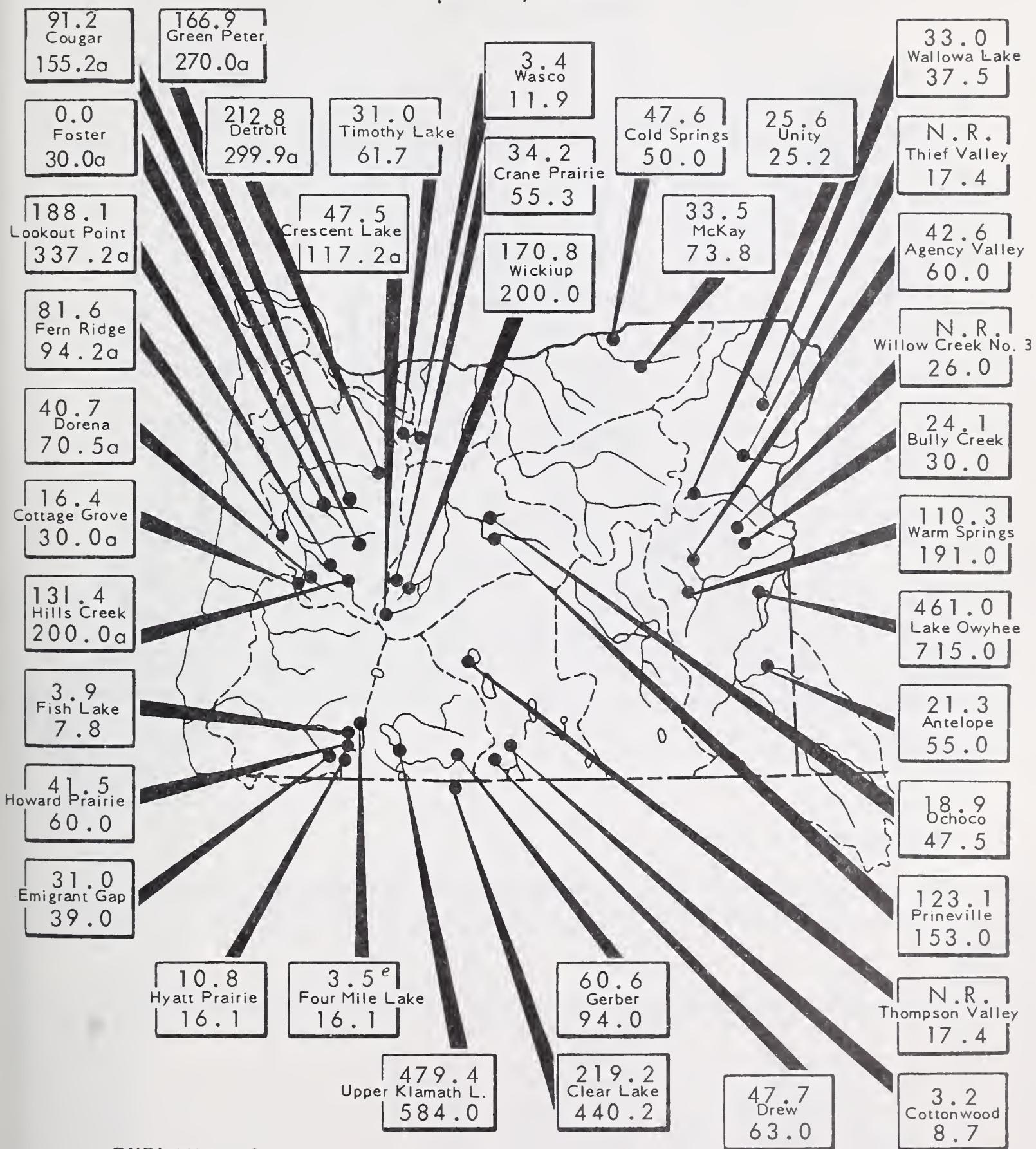
The following representative streamflow forecasts are compared with the 15-year average (1948-62) and are made on the assumption that near average conditions of temperature and precipitation will prevail in the forecast period:

<u>Stream Station</u>	<u>Period</u>	<u>Acre Feet</u>	<u>Percent Average</u>
Inflow to Lake Owyhee	Apr.-Sept.	70,000	18
Malheur R. near Drewsey	Apr.-Sept.	28,000	34
Burnt R. near Hereford	Apr.-Sept.	15,000	36
Powder R. near Baker	Apr.-Sept.	38,000	57
Lostine R. near Lostine	Apr.-Sept.	115,000	88
Grande Ronde R.-La Grande	Apr.-Sept.	45,000	22
South Fork Walla Walla R.	Apr.-Sept.	35,000	46
Umatilla R. at Pendleton	Apr.-Sept.	67,000	37
John Day R. at Prairie City	Apr.-Sept.	23,000	45
Crooked R. near Post	Apr.-Sept.	30,000	24
Deschutes R. at Benham Falls	Apr.-Sept.	312,000	49
Hood R. near Hood River	Apr.-Sept.	194,000	51
Willamette R. at Salem	Apr.-Sept.	3,800,000	68
North Umpqua blw. Lemolo	Apr.-Sept.	130,000	70
Rogue R. at Raygold	Apr.-Sept.	650,000	65
Klamath Lake Inflow	Apr.-Sept.	375,000	59
Chewaucan R. near Paisley	Apr.-Sept.	48,000	54
Drews Reservoir Inflow	Apr.-Sept.	7,200	21
Silvies R. near Burns	Apr.-Sept.	20,000	20
Blitzen R. near Frenchglen	Apr.-Sept.	18,000	29

STORAGE STATUS of OREGON RESERVOIRS

usable contents in thousands of acre feet

April 1, 1968



EXPLANATION

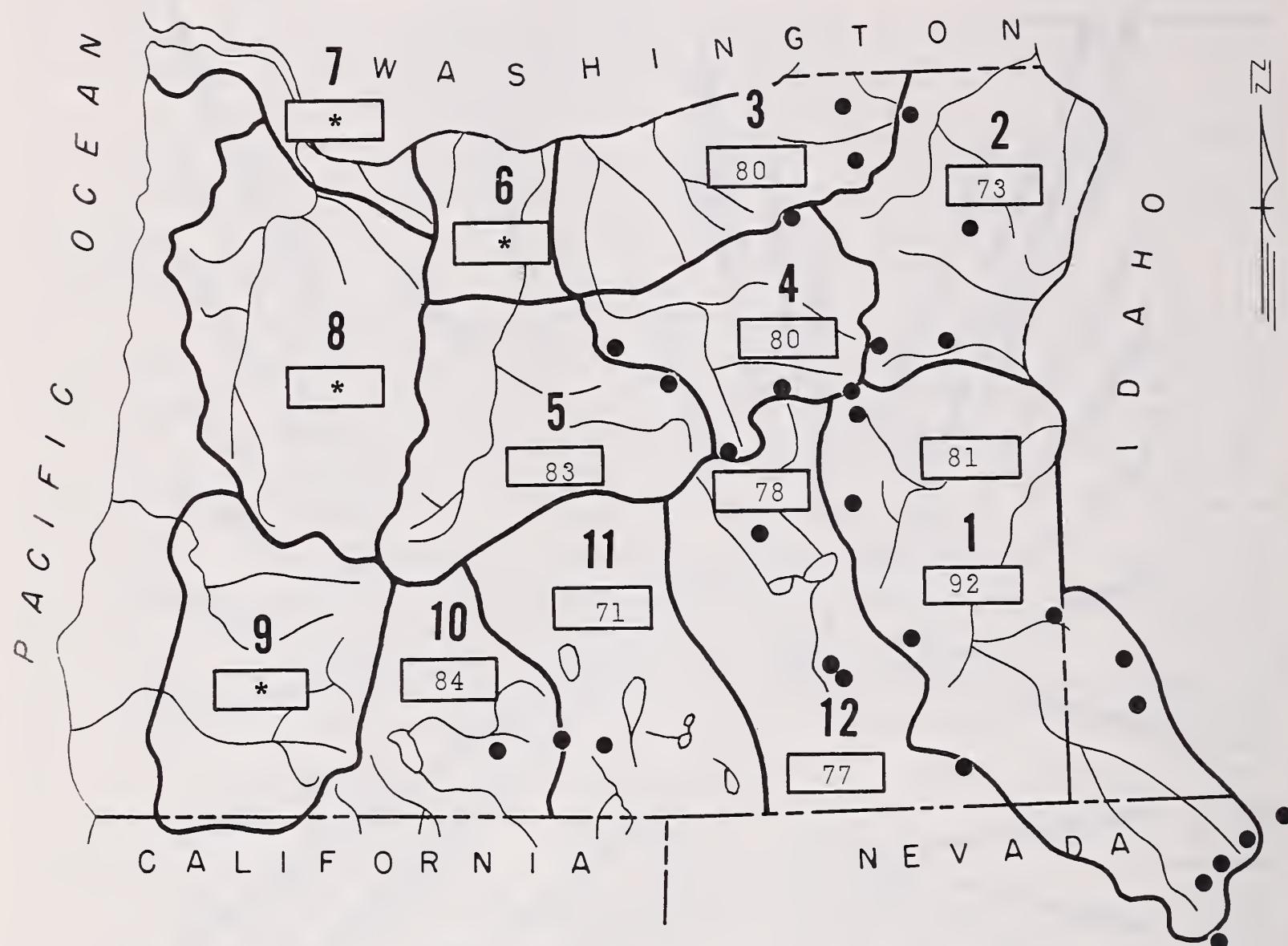
687.0	---Contents
715.0	---Capacity

(a) Multiple purpose reservoir - space reserved for flood runoff.

N. R. - No report. (e) estimated

MOUNTAIN SOIL MOISTURE in OREGON as percent of capacity

April 1, 1968

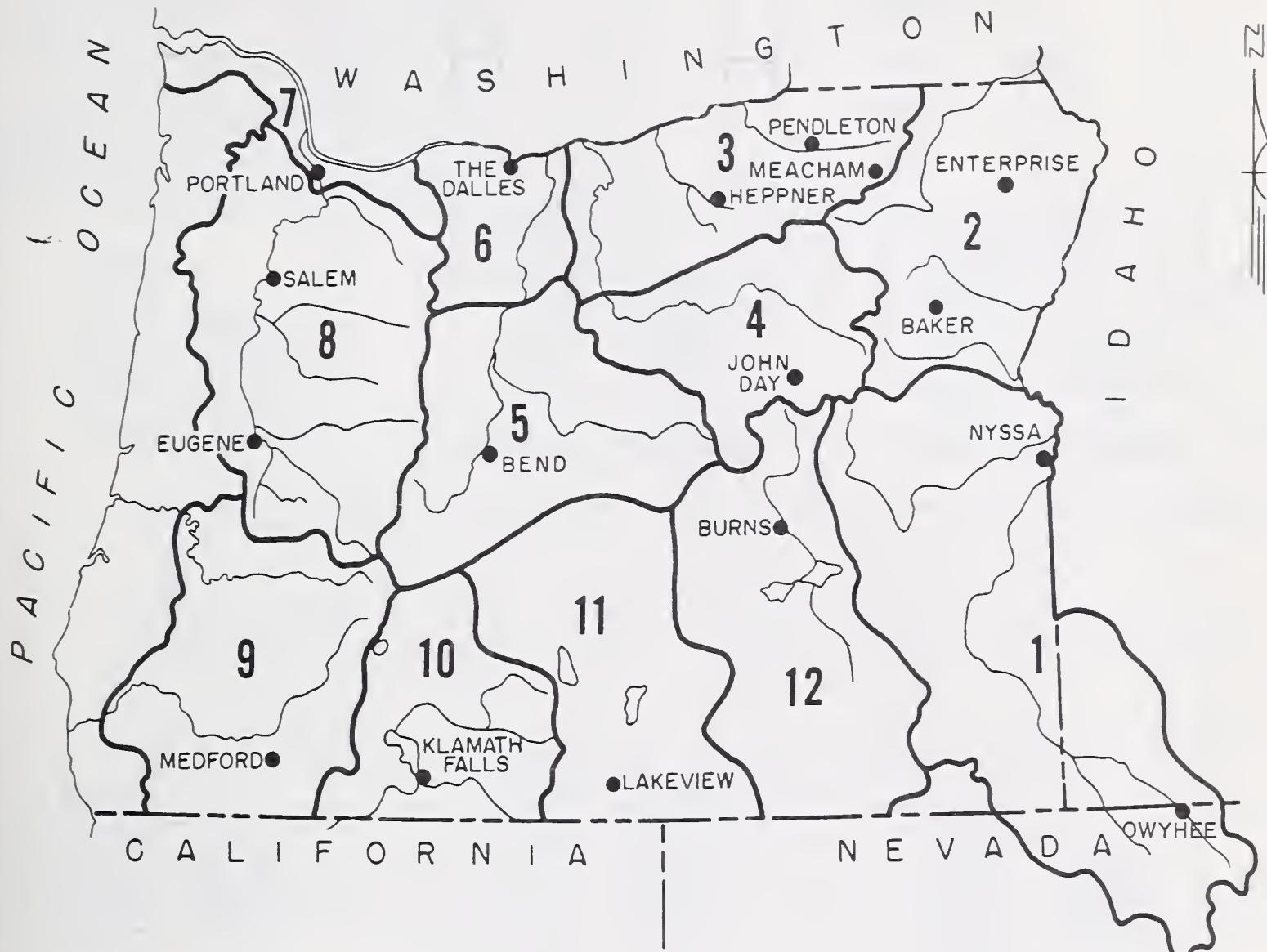


- Soil Moisture Station

*Moisture studies not yet developed in these areas.

VALLEY PRECIPITATION in OREGON ^a

April 1, 1968



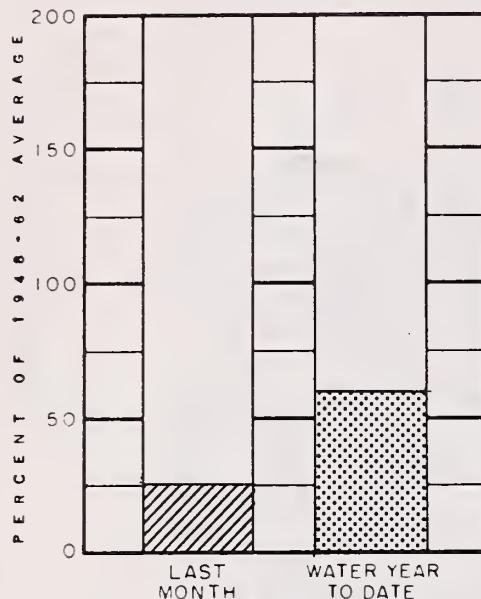
PRECIPITATION as PERCENT of the 1948-62 AVERAGE

STATION	LAST MONTH	WATER YEAR TO DATE	STATION	LAST MONTH	WATER YEAR TO DATE
BAKER	35	84	LAKEVIEW	45	88
BEND	8	51	MEACHAM	49	92
BURNS	11	77	MEDFORD APT.	46	78
ENTERPRISE	78	89	NYSSA	82	82
EUGENE APT.	79	87	PENDLETON APT.	38	57
HEPPNER	27	61	PORTLAND APT.	66	84
JOHN DAY	23	63	SALEM APT.	68	90
KLAMATH FALLS APT.	40	50	THE DALLES	25	62
			Owyhee (Nev.)	54	79

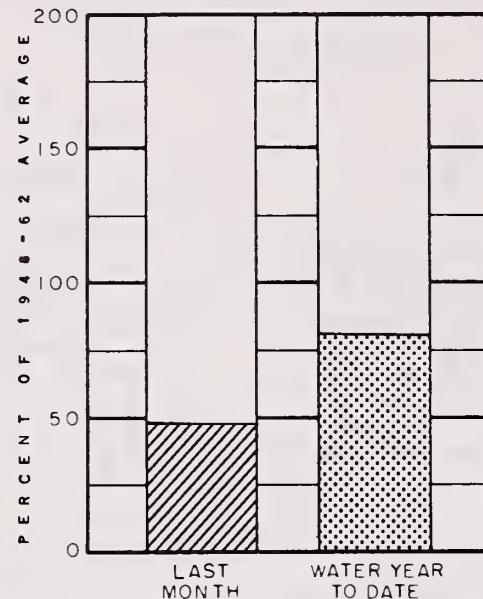
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

CURRENT OREGON STREAMFLOW

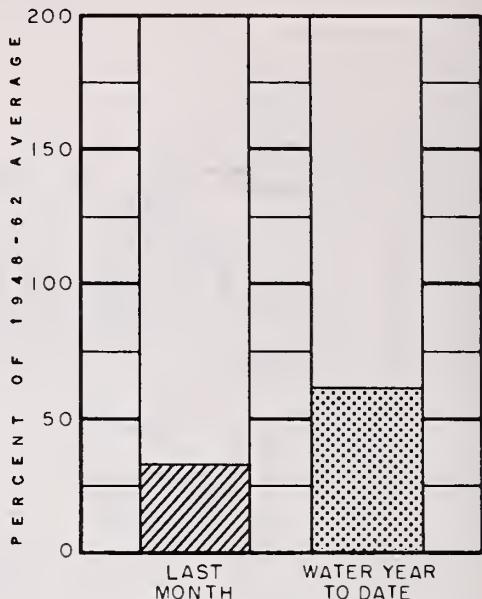
April 1, 1968



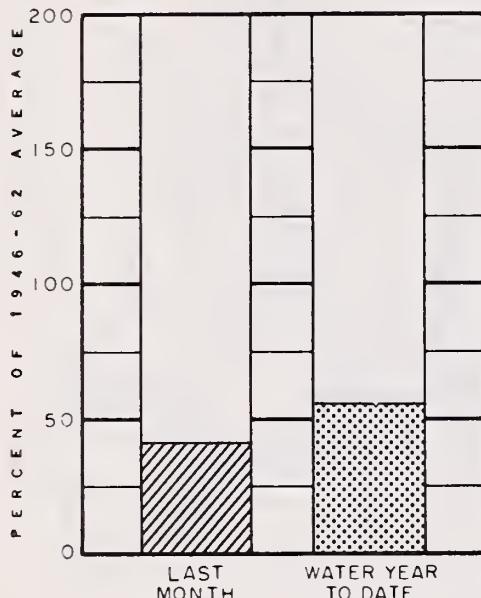
Owyhee Lake net inflow



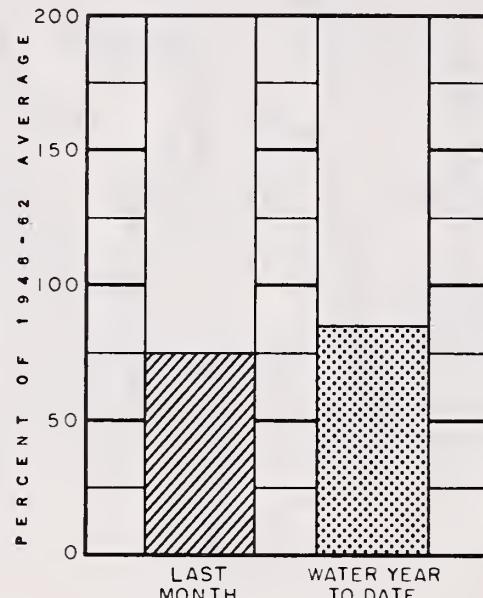
Grande Ronde at La Grande



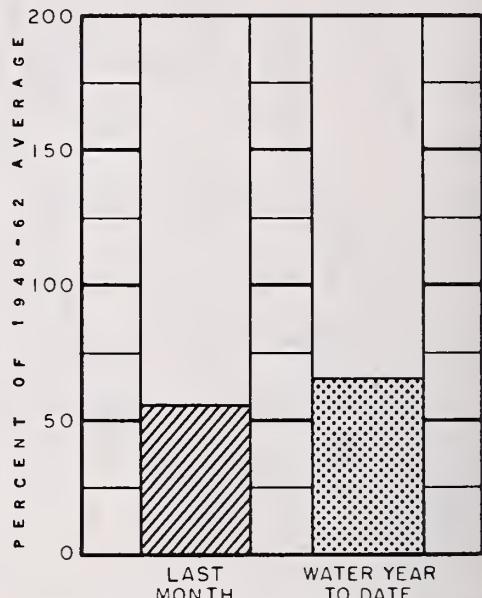
Umatilla at Pendleton



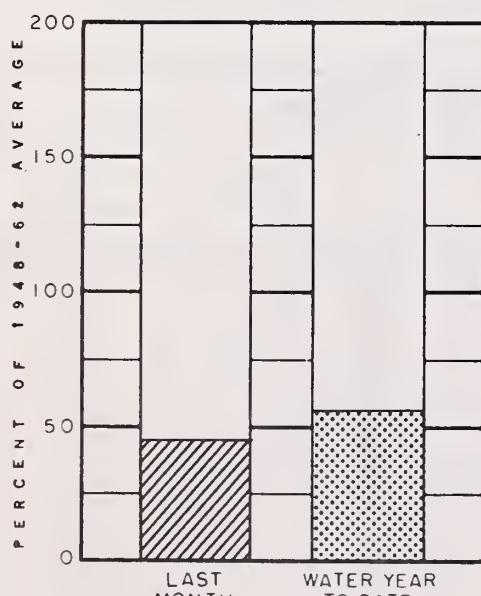
John Day at Service Creek



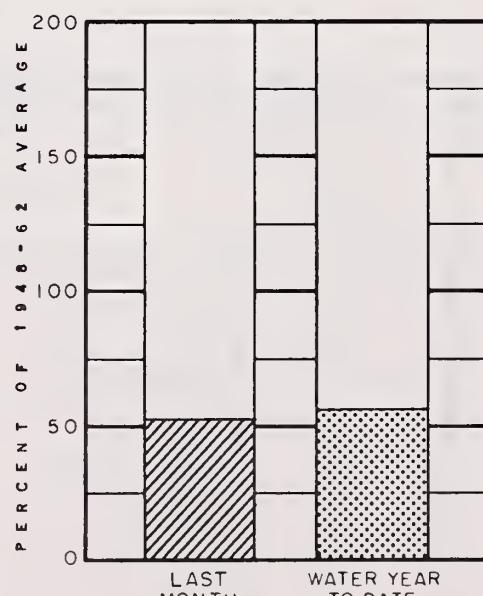
Deschutes at Moody



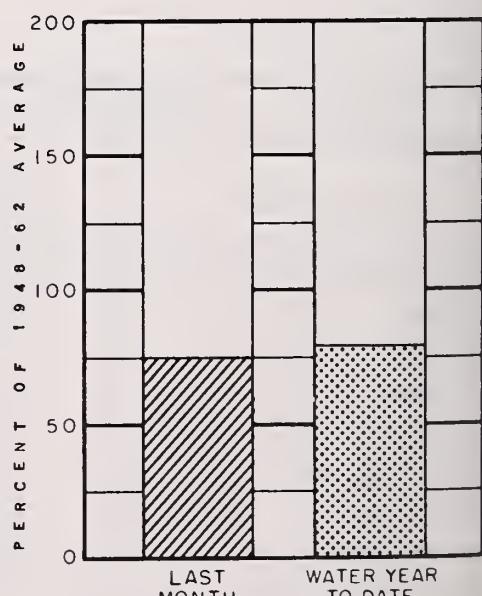
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

WATER SUPPLY OUTLOOK OWYHEE, MALHEUR WATERSHEDS OREGON

as of

APRIL 1, 1968

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

Nearly record-low streamflow is forecast for Malheur County this irrigation season and water users can expect barely sufficient water supplies only where stored water is available and adequate. All other lands will have an extremely short water supply unless substantial and unexpected rain falls at frequent intervals during the summer--a highly unlikely possibility.

SNOW COVER

Water content of the mountain snowpack is nearly record-low and is only 19 per cent of the 15-year April first average (1948-62) on the Owyhee and 35 percent average on the Malheur watersheds.

RESERVOIR STORAGE

Water stored in Lake Owyhee on April first was 461,000 acre feet compared with 422,600 acre feet a year ago. Adding the 50,000 acre feet forecasted to flow into the lake April through July gives a total of 511,000 acre feet for the season which will be sufficient if heavy pumpage from Snake River is provided.

Antelope reservoir held about 21,300 acre feet on April first compared with 25,700 acre feet last year. The reservoir filled in June last year but the Jordan Valley Irrigation District expects this year to pick up not more than 10,000 of the 28,000 acre feet that are forecast to flow in Jordan Creek April through July. With a little rain this will be a very "tight" water supply for the 7,000 acres irrigated by this district.

Total water stored in Warmsprings and Agency Valley is about 153,000 acre feet. Add to this about 42,000 acre feet forecast to flow in the two Malheur streams and the total, less expected losses, is 137,000 acre feet. However, an additional 12,000 acre feet of return flow will probably add just barely enough water to complete a reasonable irrigation season.

STREAMFLOW

The following forecasts of Malheur County streams are compared with the 15-year average (1948-62) and are made on the assumption that near average conditions of temperature and precipitation will prevail in the forecast period:

<u>Stream Station</u>	<u>Period</u>	<u>Acre Feet</u>	<u>Percent Average</u>
Jordan Creek	April-July	28,000	28
Malheur-Drewsey	April-July	26,000	32
Malheur-Beulah	April-July	16,000	27
Lake Owyhee Inflow	April-July	50,000	14

All other streams have already completed their flow or will cease to flow very shortly.

Report prepared by

W.T. FROST AND TOM GEORGE

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek	Poor	Poor
Bully Creek	Poor	Poor
Cow Creek	Poor	Poor
Jordan Creek	Poor	Poor
Jordan Valley Irrig. Dist.	Fair	Fair
McDermitt Creek	Poor	Poor
Oregon Canyon Creek	Poor	Poor
Owyhee Project	Average	Average
Succor Creek	Poor	Poor
Tenmile Creek	Poor	Poor
Vale-Oregon Irrig. Dist.	Average	Average
Warmsprings Irrig. Dist.	Average	Average
Willow Creek (Reservoired)	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1968

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Agency Valley	60.0	42.6	38.6	41.4
Antelope	55.0	21.3	25.7	19.6
Bully Creek	30.0	24.1	21.7	--
Lake Owyhee	715.0	461.0	422.6	483.4
Warmsprings	191.0	110.3	95.2	99.1
Willow Creek #3	26.0	b	--	--

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of April 1, 1968

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	THIS YEAR AS PERCENT OF AVERAGE ⁱ	
				1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ⁱ
1780	Jordan Creek above Lone Tree Creek	28	April-July	98	28
2140	Malheur near Drewsey	26	April-July	80	32
2175	Malheur, North Fork at Beulah	28	April-Sept.	82	34
		16	April-July	59	27
		19	April-Sept.	65	29
1825	Owyhee Reservoir net Inflow	50	April-July	365	14
		70	April-Sept.	383	18

SOIL MOISTURE

STATION NAME	PROFILE (Inches)		SOIL MOISTURE (Inches)			
	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bear Creek (Nev.)	7800	72	16.8	3/28	10.8	10.1
Big Bend (Nev.)	6700	48	16.7	3/25	15.8	15.6
Blue Mtn. Springs	5900	42	16.9	3/28	12.6	11.8
Crane Prairie	5375	48	18.2	3/28	16.0	16.4
Folly Farm	4450	30	12.5	c		15.2
Jack Cr., Lower (Nev.)	6800	48	8.6	3/26	8.3	8.3
Jordan Valley	4390	48	19.3	3/28	15.2	--
Mud Flat (Ida.)	5500	48	12.8	3/27	14.4	14.4
Rodeo Flat (Nev.)	6800	42	11.0	3/25	10.9	10.6
Stinking Water Summit	4800	48	21.9	b		
Taylor Canyon (Nev.)	6200	48	15.1	3/26	14.7	14.7
Triangle (Ida.)	5150	48	16.6	c		12.4 f

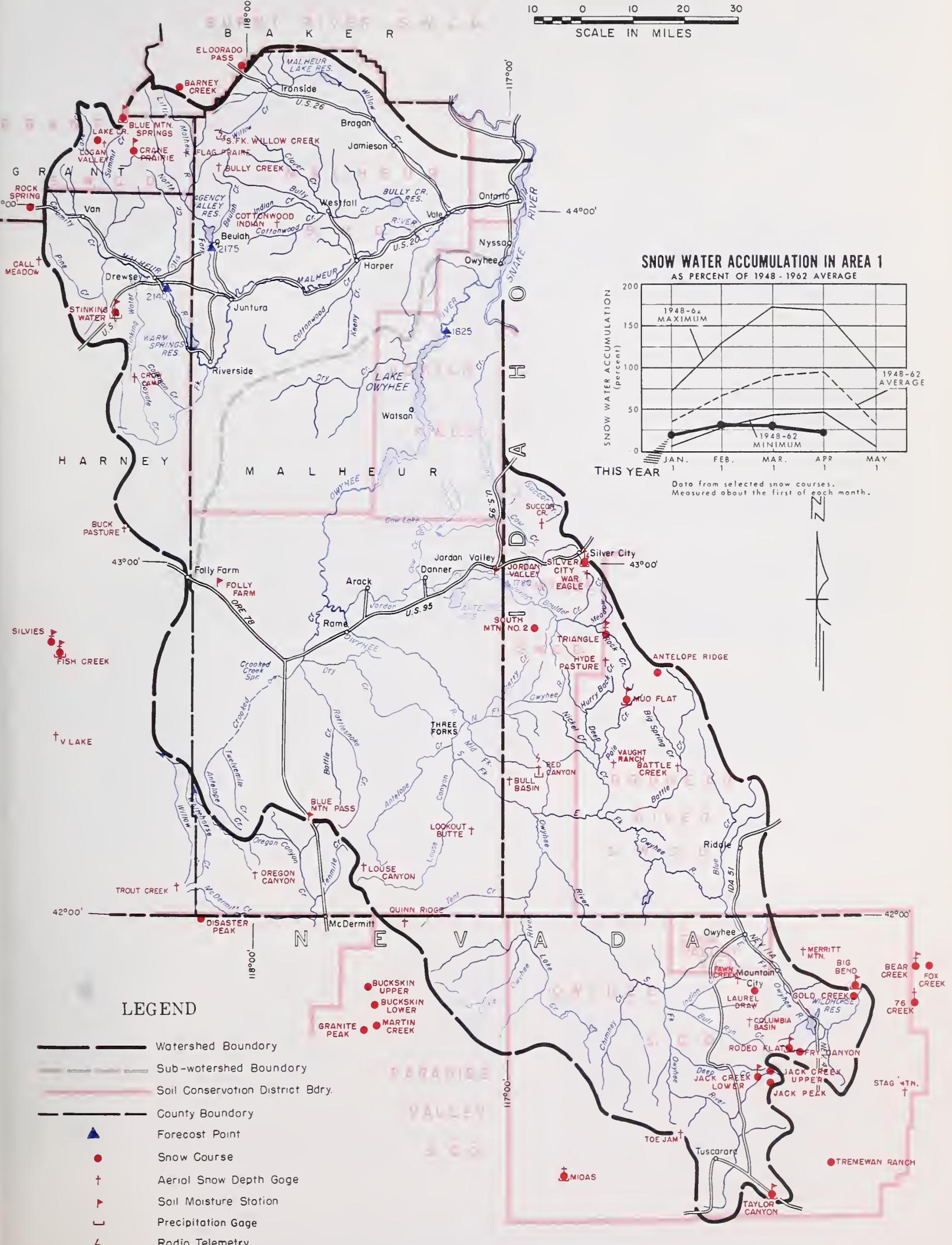
SNOW

SNOW COURSE NAME	CURRENT INFORMATION			PAST RECORD	
	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
				LAST YEAR	1948-62 AVERAGE
Antelope Ridge (Ida.)	5900	3/27	0	0.0	4.9
Barney Creek	5950	3/28	11	4.2	8.8
Battle Creek ^e (Ida.)	5700	3/29	0	0.0	--
Bear Creek (Nev.)	7800	3/28	46	16.6	20.1
Big Bend (Nev.)	6700	3/25	T	T	10.7
Blue Mountain Springs	5900	3/28	23	8.8	16.4
Buck Pasture ^e	5700	3/29	0	0.0	--
Buckskin, Lower (Nev.)	6700	3/27	3	1.1	5.9
Buckskin, Upper (Nev.)	7200	3/27	12	4.0	8.1
Bull Basine ^e (Ida.)	5600	3/29	0	0.0	--
Bully Creek ^e	5300	3/29	0	0.0	T
Call Meadow ^e	5340	3/29	0	0.0	1.4

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (l) Ground measurement. (m) Average for 5 or more years in base period.

OWYHEE, MALHEUR WATERSHEDS

10 0 10 20 30
SCALE IN MILES



Owyhee, Malheur Watersheds

SNOW

SNOW COURSE		DATE OF SURVEY	CURRENT INFORMATION		PAST RECORD	
NAME	ELEVATION		SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	LAST YEAR
Columbia Basin ^e (Nev.)	6650	b ¹	0	0.0	T	--
Cottonwood-Indian ^e	4320	3/29	8	2.9	9.6	10.9
Crane Prairie	5375	3/28	0	0.0	T	--
Crow Camp ^e	5500	3/29	4	1.2	10.6	11.7 ^h
Disaster Peak (Nev.)	6500	3/25	0	0.0	0.0	0.6 ^h
Eldorado Pass	4600	3/29	0	0.0	T	--
Fawn Creek ^e (Nev.)	7000	b ¹	42	15.2	26.6	26.9
Fish Creek	7900	3/29	0	0.0	T	--
Flag Prairie ^e	4750	3/29	12	5.4	--	10.9
Fox Creek (Nev.)	6800	3/28	0	0.0	5.9	8.9
Fry Canyon (Nev.)	6700	3/25	0	0.0	2.2	6.5
Gold Creek (Nev.)	6600	3/25	0	0.0	15.6	12.5 ^h
Granite Peak (Nev.)	7800	3/27	34	11.8	T	--
Hyde Pasture ^e (Ida.)	5800	3/29	0	0.0	0.7	3.5
Jack Creek, Lower (Nev.)	6800	3/26	T	T	8.2	11.6 ^h
Jack Creek, Upper (Nev.)	7250	3/26	13	4.3	25.6	27.5 ^h
Jack Peak (Nev.)	8420	3/26	60	19.4	10.1	11.2
Lake Creek	5120	3/28	7	2.2	T	--
Laurel Draw (Nev.)	6700	b	0	0.0	2.2	--
Logan Valley ^e	5100	3/29	0	0.0	0.0	--
Lookout Butte ^e	5650	3/29	0	0.0	1.4	--
Louse Canyon ^e	6440	3/29	0	0.0	12.3	8.8 ^h
Martin Creek (Nev.)	6700	3/27	13	4.8	T	--
Merritt Mountain ^e (Nev.)	7000	b ¹	0	0.0	1.1	1.9 ^h
Midas (Nev.)	7200	3/25	T	T	3.1	4.5 ^h
Mud Flat (Ida.)	5500	3/27	0	0.0	7.0	--
Oregon Canyon ^e	6950	3/29	0	0.0	0.0	--
Quinn Ridge (Nev.)	6300	3/29	0	0.0	2.5	--
Red Canyon ^e (Ida.)	6500	3/29	0	0.0	5.0	5.2
Rock Spring	5100	3/29	T	T	4.1	8.2
Rodeo Flat (Nev.)	6800	3/25	0	0.0	T	--
76 Creek (Nev.)	7100	b ¹	16	7.0	14.6	16.3 ^h
Silver City (Ida.)	6400	3/28	5	2.5	16.4	14.0
Silvies	6900	3/29	12	4.4	10.5	13.0 ^h
South Mountain #2 (Ida.)	6340	3/28	b ¹	0.0	T	0.9 ^h
Stag Mountain ^e (Nev.)	7800	3/29	0	0.0	6.1	--
Stinking Water	4800	3/29	0	0.0	3.4	3.7
Succor Creek ^e (Ida.)	6100	3/29	0	0.0	0.0	--
Taylor Canyon (Nev.)	6200	3/26	0	0.0	0.0	--
Toe Jam (Nev.)	7700	b ¹	0	0.0	0.0	0.7
Tremewan Ranch (Nev.)	5700	3/25	0	0.0	0.0	--
Triangle ^e (Ida.)	5150	3/29	0	0.0	0.0	--
Trout Creek ^e	7800	3/29	6	2.4	12.6	--
"V" Lake ^e	6600	3/29	0	0.0	3.2	--
Vaught Ranch ^e (Ida.)	5950	3/29	0	0.0	0.0	--
War Eagle ^e (Ida.)	7700	3/29	15	6.6	27.4	--



WATER SUPPLY OUTLOOK BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS OREGON

as of
APRIL 1, 1968

U.S.D.A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

1968 summer water supplies for farmers, ranchers and other water users will be seriously short with extreme shortages expected for lands served directly from the Grande Ronde River. All lands served from reservoirs will have sufficient water this season. Wallowa County streams will provide near average water supplies.

SNOW COVER

Water content of the mountain snowpack is only half (51 percent) of the 15-year April first average (1948-62) on watersheds of Wallowa, Union and Baker Counties.

PRECIPITATION and SOIL MOISTURE

Winter precipitation, November through March, has been 79 percent of the average according to the U.S. Weather Bureau. Mountain soil moisture has increased to 73 percent of capacity at four stations that averaged 66 percent of capacity last month. Moisture has penetrated about 20 inches in most valley soils.

RESERVOIR STORAGE

Storage in Wallowa Lake increased to 33,000 acre feet on April first compared with 12,300 a.f. a year ago. Unity reservoir is full with 25,600 acre feet held in comparison with 17,900 a.f. last year. Thief Valley reservoir is said to be full and a small amount of water has been stored by Mason Dam.

STREAMFLOW

The following forecasts of streamflow are compared with the 15-year average (1948-62) and are made on the assumption that near average conditions of temperature and precipitation will prevail in the forecast period:

<u>Stream Station</u>	<u>Period</u>	<u>Acre Feet</u>	<u>Percent Average</u>
Burnt R. near Hereford	Apr.-Sept.	15,000	36
Powder R. near Baker	Apr.-Sept.	38,000	57
Eagle Cr. abv. Skull Cr.	Apr.-Sept.	140,000	77
Grande Ronde - La Grande	Apr.-Sept.	45,000	22
Catherine Cr. near Union	Apr.-Sept.	48,000	66
Bear Cr. near Wallowa	Apr.-Sept.	54,000	75
Lostine R. near Lostine	Apr.-Sept.	115,000	88
Hurricane Cr. near Joseph	Apr.-Sept.	41,000	85
East Fk. Wallowa - Joseph	Apr.-Sept.	10,000	83
Imnaha R. at Imnaha	Apr.-Sept.	270,000	85

Many smaller streams will have extremely poor flow this season.

Report prepared by

W.T. FROST AND TOM GEORGE

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope (Hurricane)	Average	Fair
Baker Valley	Fair	Poor
Big Creek	Fair	Poor
Clover Cr. (nr. N. Powder)	Poor	Poor
Cove	Poor	Poor
Durkee	Poor	Poor
Eagle Valley	Fair	Fair
Elgin	Poor	Poor
Enterprise-Joseph	Average	Average
Hereford-Bridgeport	Average	Average
Imnaha River	Average	Fair
La Grande-Island City	Poor	Poor
Lostine-Wallowa	Average	Fair
No. Powder River-Wolf Cr.	Poor	Poor
Pine Valley	Fair	Fair
Powder River-Elk Creek	Fair	Poor
Summerville	Poor	Poor
Sumpter Valley	Poor	Poor
Union-Hot Lake	Poor	Poor
Unity	Poor	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1968

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Thief Valley	17.4	b	--	--
Unity	25.2	25.6	17.9	14.1
Wallowa Lake	37.5	33.0	12.3	18.2

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of April 1, 1968

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ⁱ
3305	Bear near Wallowa	54	April-Sept.	72	75
2730	Burnt near Hereford ^d	13	April-June	39	33
		15	April-Sept.	41	36
3200	Catherine near Union	48	April-Sept.	73	66
2882	Eagle Creek above Skull Creek	127	April-July	166	76
		140	April-Sept.	181	77
3190	Grande Ronde at La Grande	44	April-July	202	22
		45	April-Sept.	203	22
3295	Hurricane near Joseph	41	April-Sept.	48	85
2920	Imnaha at Imnaha	270	April-Sept.	318	85
3300	Lostine near Lostine	115	April-Sept.	131	88
2755	Powder near Baker	35	April-July	66	53
		38	April-Sept.	67	57
3250	Wallowa, East Fork near Joseph ^d	7.7	April-July	9.7	79
		10.0	April-Sept.	12.0	83

SOIL MOISTURE

STATION	PROFILE (Inches)			SOIL MOISTURE (Inches)		
	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION					
Blue Mtn. Summit	5100	36	16.8	3/27	11.7	12.3
Dooley Mountain	5430	36	9.2	3/22	6.6	4.0
Emigrant Springs	3925	48	22.3	3/28	20.4	20.1
Ladd Summit	3730	48	18.9	3/22	10.5	14.2
Moss Springs	5850	42	25.8	3/29	14.3*	14.6
Tollgate	5070	48	23.6	3/28	18.6*	18.8

*Accuracy questioned.

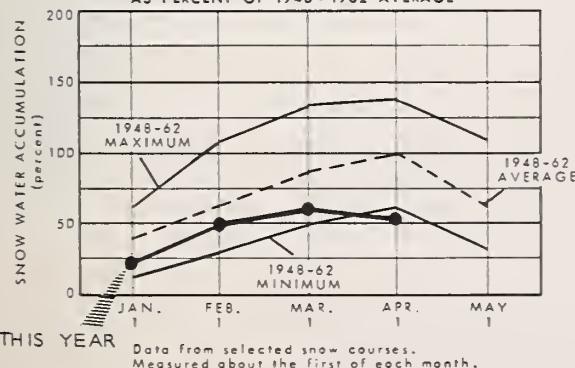
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS

10 0 10 20 30
SCALE IN MILES



SNOW WATER ACCUMULATION IN AREA 2
AS PERCENT OF 1948 - 1962 AVERAGE



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Boundary
- County Boundary
- ▲ Forecast Point
- Snow Course
- ▲ Soil Moisture Station
- ✚ Aerial Snow Depth Gage
- + Precipitation Gage

Burnt, Powder, Pine, Grande Ronde, Imnaha Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	LAST YEAR
Aneroid Lake #1	7480	3/24	90	34.4	45.2	38.9 ^h
Aneroid Lake #2	7300	3/25	79	29.0	37.4	34.6
Anthony Lake	7125	3/28	55	19.5	29.8	28.9
Bald Mountain ^e (Ore.)	6700	3/29	27	9.7	22.7	--
Barney Creek	5950	3/28	11	4.2	8.8	8.7
Beaver Reservoir	5340	3/26	15	5.9	10.2	12.8
Big Sheep ^e	6200	3/29	64	24.0	32.3	--
Blue Mountain Summit	5098	3/27	8	3.0	7.4	8.6
Bourne	5800	3/25	17	6.6	12.2	16.3
County Line	4800	3/29	0	0.0	4.3	7.6
Dooley Mountain	5430	3/22	12	4.2	8.3	9.3
Eillertson Meadows	5400	3/26	19	7.3	11.9	12.2
Eldorado Pass	4600	3/29	0	0.0	0.0	0.6 ^h
Gold Center	5340	3/25	16	6.5	11.1	13.7
Goodrich Lake	6775	3/29	86	35.9	38.1	38.8 ^h
Intake House	4930	3/26	24	7.7	10.0	--
Little Alps	6200	3/28	24	7.9	15.4	--
Little Antone	5000	3/28	0	0.0	6.3	--
Lucky Strike	5050	3/27	11	4.0	12.3	14.6 ^h
Meacham	4300	3/28	0	0.0	7.7	9.5
Mirror Lake ^e	8200	3/29	173	79.0	72.0	--
Moss Springs	5850	3/29	41	14.8	25.8	26.2
Power Plant	3990	3/26	0	0.0	2.8	--
Schneider Meadows	5400	3/27	62	25.3	29.6	32.4
Schoolmarm	4775	3/29	1	0.1	3.8	5.2 ^h
Standley ^e	7400	3/29	74	26.0	37.0	--
Taylor Green	5740	3/29	27	10.6	17.4	18.8
Tipton	5100	3/27	6	2.6	9.1	11.0 ^h
Tollgate	5070	3/28	11	3.3	24.2	29.9
TV Ridge	7000	3/29	50	18.0	26.0	--

WATER SUPPLY OUTLOOK UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

OREGON

as of

APRIL 1, 1968

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

Nearly record-low streamflow is forecast for Umatilla, Morrow and Gilliam counties this irrigation season and water users can expect extremely deficient water supplies except for lands served from the Cold Springs and McKay reservoirs which will have fair water supplies early in the season but very poor supplies in late season. All other lands will have severe water shortages.

SNOW COVER

Water content of the mountain snowpack has decreased to only 10 percent of the April first average and is missing completely at 6 out of the 9 snow courses measured. Snowpacks are only slightly better than in the record-low year of 1934.

PRECIPITATION and SOIL MOISTURE

Winter precipitation, November through March, has been 76 percent of the average according to the U.S. Weather Bureau. Mountain soil moisture is about 84 percent of the capacity. Moisture has penetrated valley soils only from 18 to 28 inches this season.

RESERVOIR STORAGE

Cold Spring's reservoir was nearly full with 47,600 acre feet on hand on April first. Additional diversions from the Umatilla River are likely to be greatly limited and it is doubtful that the Hermiston District will get much more from this source.

McKay reservoir held only 33,500 acre feet on April first and withdrawals had begun for the Westland District. The Westland and Stanfield Districts will likely experience serious water shortages in the later part of the season.

STREAMFLOW

Flow of the North and South Forks of Walla Walla River is forecast at 6,000 acre feet (32 percent average) and 30,000 acre feet (48 percent) respectively for the April-July period--far short of the usual water available.

The following forecasts are compared with the 15-year average (1948-62) and are made on the assumption that near average conditions of temperature and precipitation will prevail in the forecast period:

Stream Station	Period	Acre Feet	Percent Average
Butter Creek	April-July	2,000	20
McKay Creek	April-Sept.	9,600	30
Umatilla at Pendleton	April-July	61,000	34
Walla Walla - No. Fork	April-July	6,000	32
Walla Walla - So. Fork	April-July	30,000	48

All other streams have already completed their flow or will cease to flow very shortly.

Report prepared by

W.T. FROST AND TOM GEORGE

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

WATER SUPPLY OUTLOOK

 expressed as "Poor", "Fair"
 "Average" or "Excellent"

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1968

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Walla Walla River, No. Fk.	Poor	Poor
Walla Walla River, So. Fk.	Poor	Poor
Walla Walla River, Main	Poor	Poor
Walla Walla River, Little	Poor	Poor
Couse Creek	Poor	Poor
Dry Creek	Poor	Poor
Pine Creek	Poor	Poor
Umatilla River, Main	Poor	Poor
Wildhorse Creek	Poor	Poor
Umatilla R. (Cold Springs Reservoir)	Fair	Poor
Umatilla R. (McKay Res.)	Fair	Poor
McKay Creek	Poor	Poor
Birch Creek	Poor	Poor
Butter Creek	Poor	Poor
Willow Creek	Poor	Poor
Rhea Creek	Poor	Poor
Rock Cr. (John Day tributary)	Poor	Poor

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Cold Springs	50.0	47.6	50.0	48.1
McKay	73.8	33.5	38.8	54.0

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of April 1, 1968

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE		THIS YEAR AS PERCENT OF AVERAGE ⁱ
				1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ⁱ	
0320	Butter Creek near Pine City	2.0	April-July	9.8	20	
0225	McKay near Pilot Rock	9.6	April-Sept.	32	30	
0200	Umatilla near Gibbon	25	April-July	88	28	
		30	April-Sept.	93	32	
0210	Umatilla at Pendleton	61	April-July	178	34	
		67	April-Sept.	183	37	
0110	Walla Walla, North Fork near Milton	6.0	April-July	18.9	32	
		6.3	April-Sept.	19.6	32	
0100	Walla Walla, South Fork near Milton	30	April-July	62	48	
		35	April-Sept.	76	46	

SOIL MOISTURE

STATION	PROFILE (Inches)		SOIL MOISTURE (Inches)			
	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION					
Athena-Weston	1700	48	18.7	3/28	11.2	11.4
Battle Mtn. Summit	4340	48	13.8	3/28	12.9	13.8
Emigrant Springs	3925	48	22.3	3/28	20.4	20.1
Tollgate	5070	48	23.6	3/28	18.6*	18.8

*Accuracy questioned.

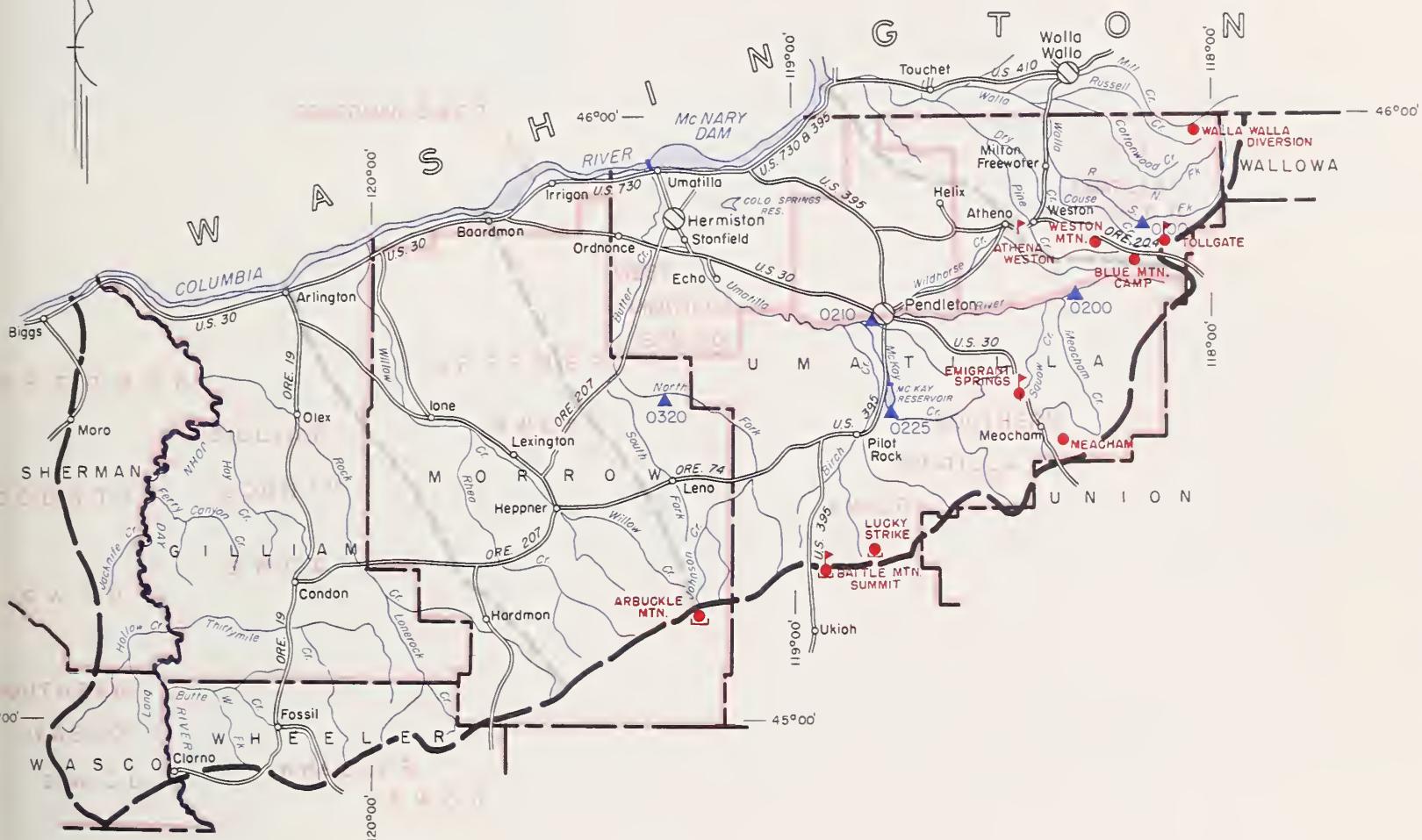
SNOW

SNOW COURSE	CURRENT INFORMATION			PAST RECORD	
	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	LAST YEAR
NAME	ELEVATION				1948-62 AVERAGE
Arbuckle Mountain	5400	3/29	0	0.0	8.1
Battle Mountain Summit	4340	3/28	0	0.0	0.6
Blue Mountain Camp	4300	3/28	3	0.8	9.5
Emigrant Springs	3925	3/28	0	0.0	0.4
Lucky Strike	5050	3/27	11	4.0	12.3
Meacham	4300	3/28	0	0.0	7.7
Tollgate	5070	3/28	11	3.3	24.2
Walla Walla Diversion	2400	Not Surveyed		0.0	0.0 ^h
Weston Mountain	2700	3/28	0	0.0	0.6

^aBased on snow depth gage, water content estimated. ^(j)Nearest current area. ^(g)Partly estimated.
 (h) 1948-62 adjusted average. ⁽ⁱ⁾1948-62 15 year average. ^(j)Telephonic report - data not confirmed.
 (k) Data from PP&L Co. or USBR records. ^(m)Average for 5 or more years in base period.

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

10 0 10 20 30
SCALE IN MILES

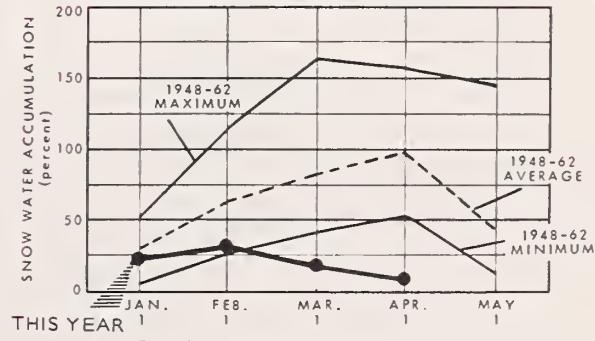


LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- ▼ Soil Moisture Station
- Precipitation Gage

SNOW WATER ACCUMULATION IN AREA 3

AS PERCENT OF 1948-1962 AVERAGE



Data from selected snow courses.
Measured about the first of each month.

Umatilla, Walla Walla, Willow, Rock, Lower John Day Watersheds

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK UPPER JOHN DAY WATERSHEDS OREGON

as of

APRIL 1, 1968

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

Nearly record-low streamflow is forecast for John Day Basin in the 1968 irrigation season and local water users can expect extreme shortages in the middle and late weeks of the summer.

SNOW COVER

Water content of the mountain snowpack in Grant and Wheeler counties continued to decrease and is now only 18 percent of the 15-year April first average (1948-62). The snow situation has been worse only in 1934 and 1963.

PRECIPITATION and SOIL MOISTURE

Winter precipitation, November through March, has been only 60 percent of the average according to the U.S. Weather Bureau. March was only 26 percent average. Upper watershed soils are now wet to 80 percent of capacity. Valley soils are wet down to only one and one-half or two feet in depth.

STREAMFLOW

The following forecasts of streamflow in John Day Basin are compared with the 15-year April first average (1948-62) and are made with the assumption that near average conditions of temperature and precipitation will prevail for the period of the forecast:

<u>Stream Station</u>	<u>Period</u>	<u>Acre Feet</u>	<u>Percent Average</u>
John Day - Prairie City	April-July	20,000	44
John Day - Ritter	April-July	57,000	45
Strawberry Creek	April-July	5,600	69

All other streams have already completed their flow or will cease to flow very shortly.

Report prepared by

W.T. FROST AND TOM GEORGE

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Beech Creek	Poor	Poor
Beech Creek-Fox-Long Cr.	Poor	Poor
Bridge-Mountain Creeks	Poor	Poor
Camas Creek	Poor	Poor
Cherry Creek	Poor	Poor
Indian-Pine Creeks	Poor	Poor
John Day River, Main Fork	Poor	Poor
John Day River, Mid. Fork	Poor	Poor
John Day River, N. Fork	Poor	Poor
John Day River, S. Fork	Poor	Poor
Monument-Kimberly	Poor	Poor
Strawberry Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1968

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of April 1, 1968

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ⁱ
NO.	NAME				
0385	John Day at Prairie City	20	April-July	46	44
		23	April-Sept.	51	45
0440	John Day, Middle Fork at Ritter	57	April-July	127	45
		60	April-Sept.	131	46
0375	Strawberry near Prairie City	5.6	April-July	8.1	69
		6.0	April-Sept.	8.8	68

SOIL MOISTURE

STATION	PROFILE (Inches)		SOIL MOISTURE (Inches)			
	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION					
Battle Mtn. Summit	4340	48	13.8	3/28	12.9	13.8
Beech Creek	4800	48	21.3	3/27	15.1	17.4
Blue Mountain Springs	5900	42	16.9	3/28	12.6	11.8
Blue Mountain Summit	5100	36	16.8	3/27	11.7	12.3
Derr	5670	24	9.0	3/27	8.9	8.1
Marks Creek	4540	36	14.1	3/27	11.8*	13.6
Snow Mountain	6300	48	16.7	4/1	12.2	15.5
Starr Ridge	5150	36	10.6	3/28	10.5	10.5
Williams Ranch	4500	42	17.9	b		9.0

*Accuracy questioned.

SNOW

SNOW COURSE	CURRENT INFORMATION			PAST RECORD	
	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)
					LAST YEAR
					1948-62 AVERAGE
Anthony Lake	7125	3/28	55	19.5	29.8
Arbuckle Mountain	5400	3/29	0	0.0	8.1
Battle Mtn. Summit	4340	3/28	0	0.0	0.6
Beech Creek Summit	4800	3/27	0	0.0	3.2
Blue Mountain Springs	5900	3/28	23	8.8	16.4
Blue Mountain Summit	5098	3/27	8	3.0	7.4
Derr	5670	3/27	1	0.5	9.4
East Fork Canyon	5700	3/31	0	0.0	9.0
Gold Center	5340	3/25	16	6.5	11.1
Indian Creek Butte	6550	3/31	30	11.4	23.4
Izee Summit	5293	3/28	0	0.0	7.0
Lucky Strike	5050	3/27	11	4.0	12.3
Marks Creek	4540	3/27	0	0.0	1.5
Ochoco Meadows	5200	3/30	0	0.0	10.1
Olive Lake	6000	3/29	35	11.7	18.2
Schoolmarm	4775	3/29	1	0.1	3.8
Snow Mountain	6300	4/1	9	3.2	15.6
Starr Ridge	5150	3/28	0	0.0	4.2
Tipton	5100	3/27	6	2.6	9.1
Williams Ranch	4500	3/31	0	0.0	--

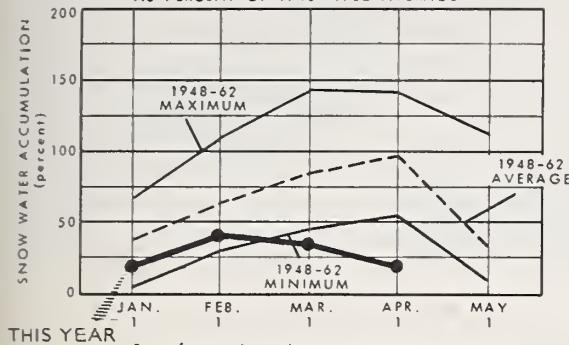
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

UPPER JOHN DAY WATERSHEDS

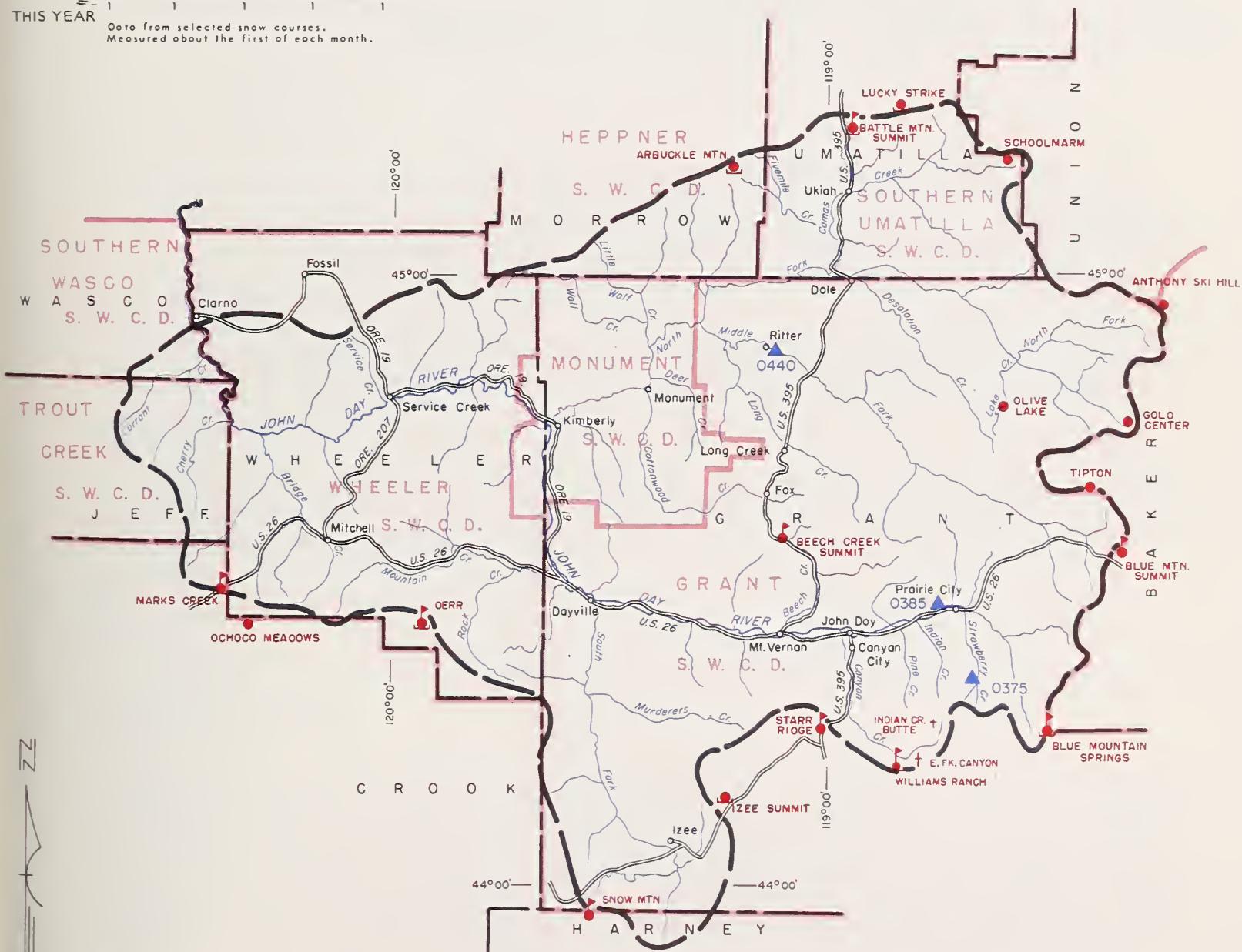
10 0 10 20 30
SCALE IN MILES

SNOW WATER ACCUMULATION IN AREA 4

AS PERCENT OF 1948 - 1962 AVERAGE



This Year Data from selected snow courses.
Measured about the first of each month.



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- Soil Moisture Station
- † Aerial Snow Depth Gage
- Precipitation Gage

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Average	Fair
Bear Creek	Poor	Poor
Beaver Creek	Poor	Poor
Camp Creek	Poor	Poor
Central Ore. Irrig. Dist.	Average	Fair
Crooked River	Poor	Poor
Deschutes River	Fair	Poor
Hay-Trout Creeks	Poor	Poor
Lone Pine Irrig. Dist.	Average	Fair
Mill Creek	Poor	Poor
North Unit Irrig. Dist.	Fair	Poor
Ochoco Creek	Poor	Poor
Sisters Irrigation Dist.	Fair	Poor
Snow Creek Irrig. Dist.	Fair	Fair
Squaw Creek Irrig. Dist.	Average	Fair
Swalley Ditch	Average	Average
Tumalo Project	Average	Fair
Walker Basin Irrig. Dist.	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.)

April 1, 1968

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Crane Prairie	55.3	34.2	38.8	46.5
Crescent Lake	86.9	47.5	55.2	45.9
Ochoco	47.5	18.9	29.0	32.1
Prineville	153.0	123.1	128.2	--
Wickiup	200.0	170.8	180.6	188.2

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.)

as of April 1, 1968

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE		THIS YEAR AS PERCENT OF AVERAGE ⁱ
				FORECAST POINT NAME	1948-62 AVERAGE	
0535	Crane Prairie Reservoir total Inflow	58	April-July	94	62	
		86	April-Sept.	143	60	
0600	Crescent at Crescent Lake ^d	7.1	April-July	26	27	
		9.1	April-Sept.	33	28	
0795	Crooked near Post	28	April-July	123	23	
		30	April-Sept.	125	24	
0645	Deschutes at Benham Falls ^d	194	April-July	417	46	
		312	April-Sept.	631	49	
0500	Deschutes below Snow Creek	40	April-Sept.	75	53	
0630	Deschutes, Little near Lapine ^d	28	April-July	99	28	
		31	April-Sept.	113	27	
0848	Ochoco Reservoir net Inflow	4.0	April-Sept.	32	12	
0555	Odell near Crescent	20	April-Sept.	34	59	
0750	Squaw near Sisters	38	April-Sept.	56	68	
0730	Tumalo near Bend ^d	39	April-Sept.	54	72	

SOIL MOISTURE

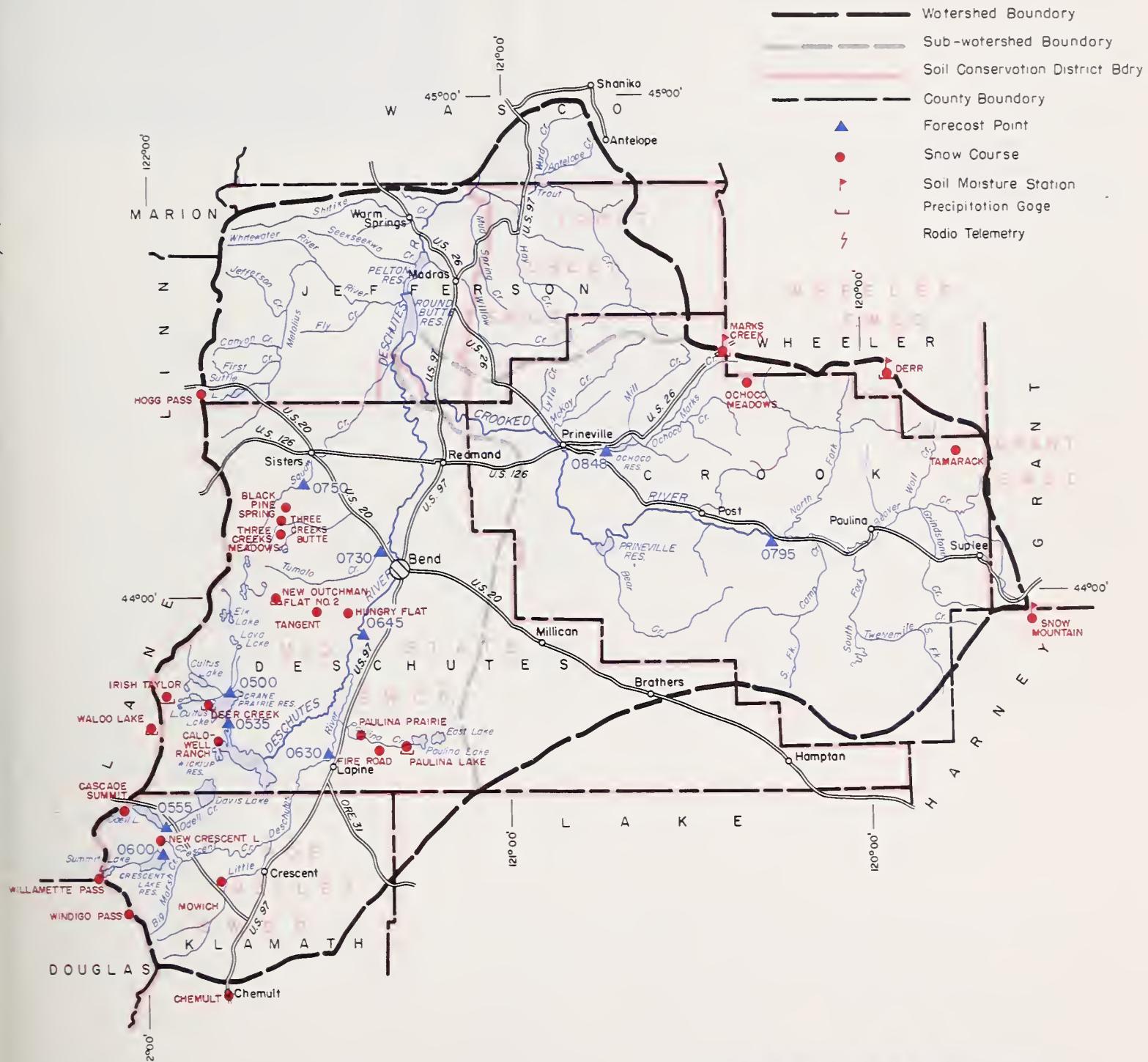
STATION	PROFILE (Inches)			SOIL MOISTURE (Inches)			
	NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR
Derr	5670	24	9.0	3/27	8.9	8.1	8.5
Marks Creek	4540	36	14.1	3/27	11.8	13.6	13.6
Snow Mountain	6300	48	16.7	4/1	12.2	15.5	12.3

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

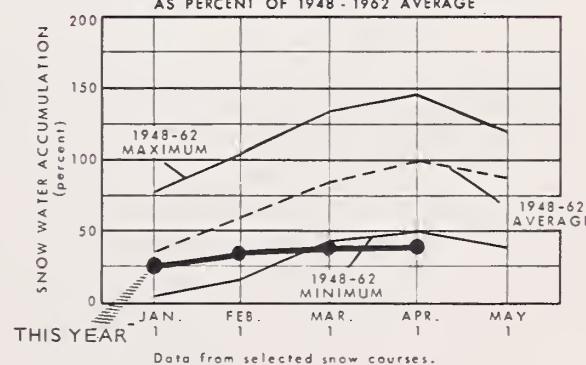
UPPER DESCHUTES, CROOKED WATERSHEDS

A horizontal scale bar with tick marks at 10, 0, 10, 20, and 30. Below the scale, the words "SCALE IN MILES" are written.

LEGEND



SNOW WATER ACCUMULATION IN AREA 5



Data from selected snow courses.
Measured about the first of each month

Upper Deschutes, Crooked Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	LAST YEAR
NAME	ELEVATION					1948-62 AVERAGE
Black Pine Spring	4600	3/25	0	0.0	0.0	5.2 ^h
Caldwell Ranch	4400	3/26	1	0.3	7.8	11.0
Cascade Summit	4880	4/1	36	14.9	29.9	36.2
Chemult	4760	3/28	2	0.9	9.9	10.5
Deer Creek	4554	3/26	26	10.1	16.9	--
Derr	5670	3/27	1	0.5	9.4	11.0
Fire Road	5050	3/25	0	0.0	6.5	6.7 ^h
Hogg Pass	4755	4/1	50	21.1	41.6	49.7
Hungry Flat	4400	3/25	0	0.0	T	4.2 ^h
Irish-Taylor	5500	3/26	52	19.3	37.8	44.6 ^h
Marks Creek	4540	3/27	0	0.0	1.5	2.4
Mowich	4700	3/26	0	0.0	5.2	2.9 ^h
New Crescent Lake	4800	3/27	10	4.8	15.0	17.8
New Dutchman Flat #2	6400	3/25	61	25.1	52.6	57.7
Ochoco Meadows	5200	3/30	0	0.0	10.1	11.6
Paulina Lake	6330	3/25	24	9.0	20.7	22.0 ^h
Paulina Prairie	4285	3/25	0	0.0	0.0	0.3 ^h
Snow Mountain	6300	4/1	9	3.2	15.6	14.7
Tamarack	4800	3/28	0	0.0	4.1	-- ^h
Tangent	5400	3/25	32	12.4	20.8	25.0 ^h
Three Creeks Butte	5200	3/25	5	0.7	6.4	12.9 ^h
Three Creeks Meadows	5650	3/25	19	7.5	15.6	23.6
Waldo Lake	5500	3/27	48	17.3	32.7	35.8 ^h
Willamette Pass	5600	3/27	66	24.4	42.7	46.3 ^h
Windigo Pass	5800	3/27	60	22.7	38.4	48.7

"The Conservation of Water begins with the Snow Survey"



WATER SUPPLY OUTLOOK HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS OREGON

as of

APRIL 1, 1968

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

Extremely deficient streamflows are forecast for Hood River and Wasco counties for the summer of 1968 and most water users can expect serious shortages this season.

SNOW COVER

Water content of the scant remaining mountain snowpack is only 25 percent of the 15-year April first average (1948-62).

PRECIPITATION and SOIL MOISTURE

Winter precipitation, November through March, has been only 63 percent of the 15-year average according to the U. S. Weather Bureau. In March the amount was only 24 percent of the average. Soil moisture is very good in most local areas.

RESERVOIR STORAGE

Water stored in small reservoirs is far short of this season's needs.

STREAMFLOW

The following forecasts of streamflow are compared with the 15-year average (1948-62) and are made with the assumption that near average conditions of temperature and precipitation will prevail during the forecast period:

<u>Stream Station</u>	<u>Period</u>	<u>Acre Feet</u>	<u>Percent Average</u>
Hood R. near Hood River	April-Sept.	194,000	51
West Fork Hood River	April-Sept.	100,000	55
White R. below Tygh Valley	April-Sept.	55,000	31

Flows of Mill Creek, the Mile Creeks and small tributaries of Hood and White Rivers will be extremely short this season.

Report prepared by
W.T. FROST AND TOM GEORGE

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch (Tony Creek)	Poor	Poor
Badger Creek	Poor	Poor
Dee Irrigation District	Poor	Poor
East Fork Irrigation Dist.	Poor	Poor
Farmers Irrigation Dist.	Poor	Poor
Hood River Irrig. Dist.	Poor	Poor
Juniper Flat	Poor	Poor
Middle Fork Irrig. Dist.	Poor	Poor
Mile Creeks	Poor	Poor
Mill Creek	Poor	Poor
Mount Hood Irrig. Dist.	Poor	Poor
Rock-Gate-Threemile Crs.	Poor	Poor
Tygh Creek	Poor	Poor
White River	Poor	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1968

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Clear Lake	11.9	3.4	2.6	--

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of April 1, 1968

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ⁱ
NO.	NAME				
1210	Hood near Hood River ^d	149 194	April-July April-Sept.	322 381	46 51
1185	Hood, West Fork near Dee	84 100	April-July April-Sept.	155 179	54 55
1015	White below Tygh Valley	40 55	April-July April-Sept.	158 176	25 31

SNOW

SNOW COURSE	CURRENT INFORMATION			PAST RECORD		
	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)
Brooks Meadows	4300	3/29		0	0.0	11.0
Clear Lake	3500	3/28		0	0.0	5.8
Clear Lake (Experimental)	3500	3/28		0	0.0	13.5
Cooper Spur	3490	4/1		0	0.0	6.0
Greenpoint Reservoir	3400	3/28		5	2.0	13.0
Knebal Springs	3850	3/29		0	0.0	--
Lambert Point	7000	c				--
Parkdale	1770	c				--
Phlox Point	5400	3/28		59	24.0	61.9
Red Hill	4400	3/27		30	14.2	30.2
Still Creek	3670	3/28		11	4.3	21.8
Switchback	3255	4/1		0	0.0	11.0
Tilly Jane	6000	3/23		33	13.4	34.7
Ulrich Ranch Junction	3350	3/29		0	0.0	--
Umbrella Falls	5400	3/30		85	35.8	69.2
Upper Valley	2530	c				--

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

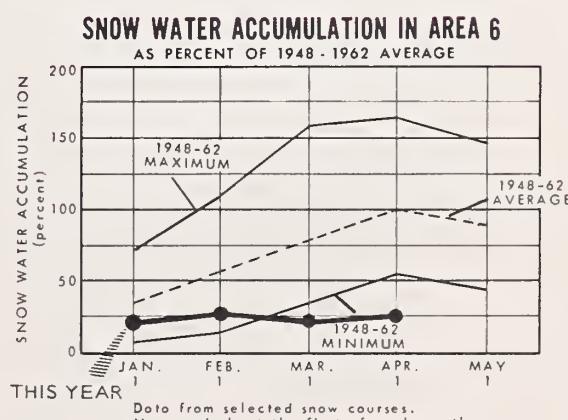
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

10 0 10 20
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- ↑ Aerial Snow Depth Gage
- 旗 Soil Moisture Station
- 〔 Precipitation Gage
- 竖 Temperature Gage
- ? Radio Telemetry



Hood, Mile Creeks, Lower Deschutes Watersheds

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK LOWER COLUMBIA WATERSHEDS OREGON

as of

APRIL 1, 1968

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

Less than average snowmelt season streamflow is in prospect on practically all Columbia Basin streams. Headwater tributaries of the Clark Fork and the Snake will have near average flows. Streamflow will be extremely deficient throughout Oregon, southern Washington and southwestern Idaho. Good carryover reservoir storage will offset shortages in many areas. Water shortages are expected in Oregon in those areas without adequate stored water supplies.

SNOW COVER

Except for a further decline in mountain snowpack with respect to average in Oregon during March, the snow cover pattern in the Columbia Basin remains much the same as on March 1. The snowpack in Canada on the Columbia River headwaters ranged from 85 percent of average on the Kootenai to 115 percent on the main stem with 110 percent reported on the Okanogan. The upper reaches of the Snake have a near average snowpack. The snow declines rapidly on the Boise and the lower reaches of the Salmon and Clearwater. In Montana the upper headwaters of the Clark Fork and Kootenai range from slightly above to slightly below average. In the Blue Mountains in southeastern Washington the April 1 snowpack is 50 percent of average. Deficient snowfall continued in Oregon during March and the current snowpack ranges from 10 to 50 percent of average.

SOIL MOISTURE

In general soil moisture conditions in the Basin are good. Snowmelt at the median elevations, coupled with rainfall, has primed the soil to a near average condition. Soils will dry out rapidly due to the lack of snow unless offset by spring rains. There is a strong likelihood that a large portion of the forest lands in Oregon, eastern Washington and Idaho will be very dry by late summer or early fall.

STREAMFLOW

Flow of the Columbia River at The Dalles, Oregon, as reported by the U. S. Geological Survey, was slightly below average during the fall. In February and March the flow was moderately above average, reflecting unseasonable midwinter snowmelt and rain. The record by months for the 1968 water year to date was as follows:

<u>Month</u>	<u>Percent of Average Discharge (1948-62)</u>			
October	96	(Adjusted for storage)	"	"
November	99	"	"	"
December	88	"	"	"
January	96	"	"	"
February	129	"	"	"
March	118	"	"	"

Report prepared by

W.T. FROST AND TOM GEORGE

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of April 1, 1968

NO.	NAME	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ⁱ
1057	Columbia at The Dalles		66,100 95,000	April-June April-Sept.	'74,100 108,500	89 87

HISTORICAL DATA (Columbia River at The Dalles)

YEAR	STREAMFLOW ^d (1,000 A.F.)			PEAK (1,000 c.f.s.)	DATE
	APR.— SEPT.	APR.— JUNE	MAY— JUNE		
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,000	64,000	48,000	442	June 6
1961	101,400	74,400	64,000	699	June 8
1962	94,600	64,100	49,200	460	June 5
1948-62 Avg.	108,500	74,100	60,200	633	
1963	87,000	56,300	46,200	437	June 18
1964	109,020	70,739	61,313	662	June 18

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)

VANCOUVER GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s.)	DRAINAGE DISTRICT PUMPHOUSE						
		SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
							RIVER MILES	
		118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	943	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	897	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	853	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	811	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	771	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	733	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	697	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	662	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	628	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	595	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20 (1954)	564	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	534	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	501	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	479	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	452	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

LOWER COLUMBIA WATERSHEDS

10 0 10 20 30
SCALE IN MILES



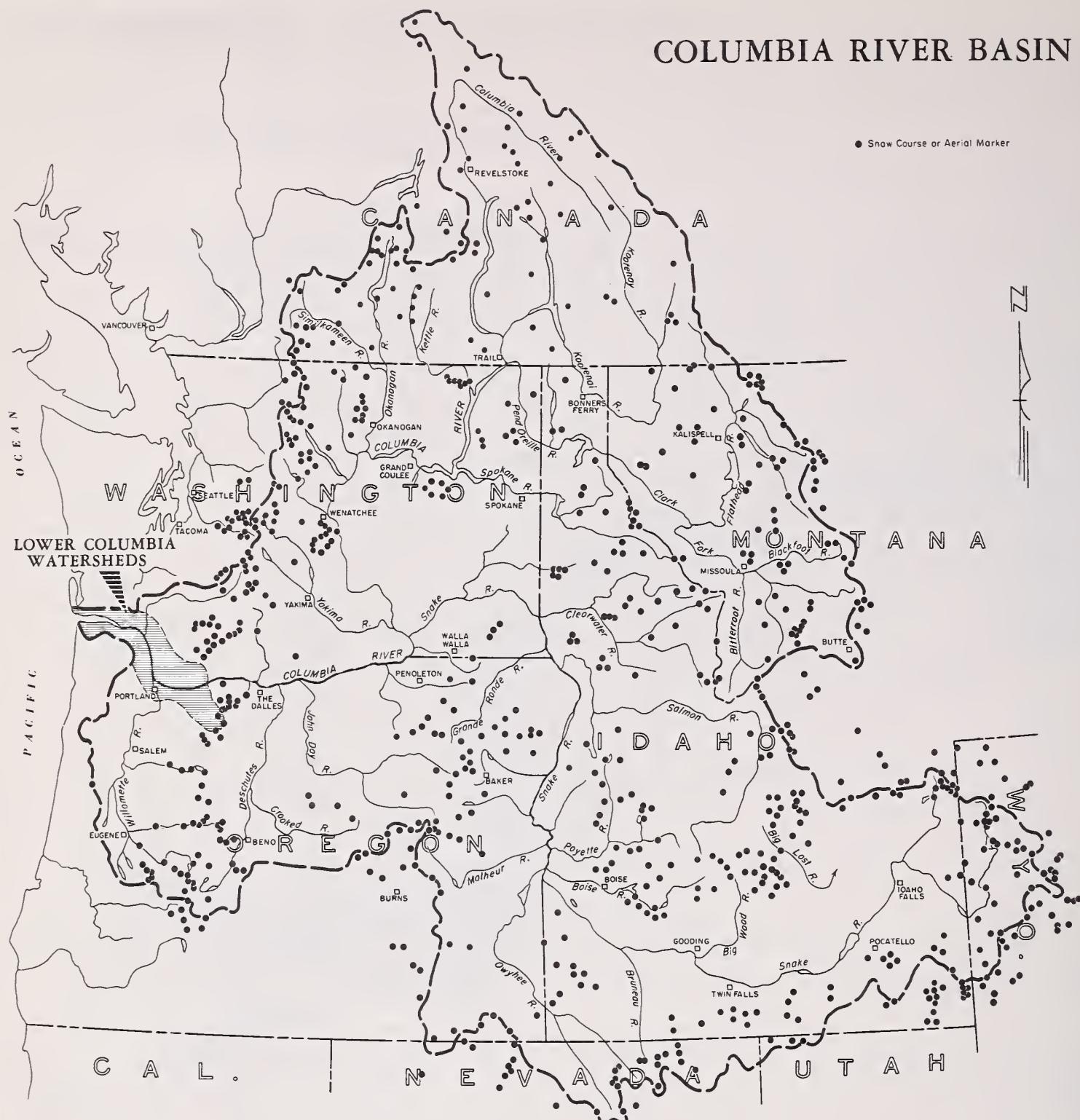
WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- (50) River Miles
- Snow Course
- Temperature
- ⚡ Radio Telemetry

Lower Columbia Watersheds

COLUMBIA RIVER BASIN



"The Conservation of Water begins with the Snow Survey"



WATER SUPPLY OUTLOOK WILLAMETTE WATERSHEDS OREGON

as of

APRIL 1, 1968

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

Some early season shortages of water supplies are forecast for most irrigated lands in the Willamette Valley followed by serious shortages in the latter part of the season except where adequate supplies of stored water or ground water are available.

SNOW COVER

Water content of the scanty mountain snowpack has decreased to only 41 percent of the 15-year April first average (1948-62). Almost all of the snow is located in the forested areas above the 4500 foot level.

PRECIPITATION and SOIL MOISTURE

Winter precipitation, November through March, has been 73 percent of the 15-year average according to the U. S. Weather Bureau. March precipitation was only 57 percent of the average. Moisture in all soils is greater than usual for this date.

RESERVOIR STORAGE

Willamette Basin reservoirs serve multiple purposes and current levels of storage are close to the usual amounts on hand on April first. Many of these reservoirs have blocks of stored water which can be made available for irrigation purposes.

STREAMFLOW

The following forecasts of streamflow are compared with the 15-year average (1948-62) and are made with the assumption that near average conditions of temperature and precipitation will prevail during the forecast period:

<u>Stream Station</u>	<u>Period</u>	<u>Acre Feet</u>	<u>Percent Average</u>
Row River near Dorena	Apr.-Sept.	70,000	62
Middle Fork Willamette	Apr.-Sept.	580,000	60
McKenzie R. at McKenzie Bridge	Apr.-Sept.	410,000	62
South Santiam - Waterloo	Apr.-Sept.	440,000	65
North Santiam - Mehama	Apr.-Sept.	590,000	60
Willamette at Salem	Apr.-Sept.	3,800,000	68
Clackamas R. at Estacada	Apr.-Sept.	585,000	66

Report prepared by
W.T. FROST AND TOM GEORGE

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya	Fair	Poor
Clackamas	Fair	Poor
McKenzie	Fair	Poor
Molalla	Fair	Poor
Santiam, North	Fair	Poor
Santiam, South	Fair	Poor
Willamette, Coast Fork	Fair	Poor
Willamette, Middle Fork	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1968

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Cottage Grove	30.0*	16.4	16.2	18.3
Cougar	155.2*	91.2	69.5	--
Detroit	299.9*	212.8	146.6	173.5 ^m
Dorena	70.5*	40.7	35.3	38.7 ^m
Fall Creek	115.0*	75.0	73.6	--
Fern Ridge	94.2*	81.6	71.0	67.1
Foster	30.0*	0.0	--	--
Green Peter	270.0*	166.9	--	--
Hills Creek	200.0*	131.4	105.8	--
Lookout Point	337.2*	188.1	143.2	183.0 ^m
Timothy Lake	61.7	31.0	54.1	46.2 ^m

*Multiple purpose reservoir--space reserved primarily for flood runoff.

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of April 1, 1968

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	THIS YEAR AS PERCENT OF AVERAGE ⁱ	
				1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ⁱ
2080	Clackamas at Big Bottom	97	April-July	150	65
		122	April-Sept.	184	66
2100	Clackamas at Estacada	480	April-July	770	62
		585	April-Sept.	890	66
2095	Clackamas above Three Lynx	360	April-July	584	62
		450	April-Sept.	683	66
1590	McKenzie at McKenzie Bridge	300	April-July	502	60
		410	April-Sept.	658	62
1625	McKenzie near Vida	800	April-July	1144	70
		1000	April-Sept.	1392	72
2090	Oak Grove Fork above Power Intake	98	April-July	147	67
		128	April-Sept.	190	67
1545	Row near Dorena	65	April-July	108	60
		70	April-Sept.	112	62
1830	Santiam, North at Mehama ^d	510	April-July	884	58
		590	April-Sept.	991	60
1875	Santiam, South at Waterloo	400	April-July	637	63
		440	April-Sept.	675	65
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge ^d	494	April-July	863	57
		580	April-Sept.	968	60
1910	Willamette at Salem ^d	3300	April-July	5040	65
		3800	April-Sept.	5566	68

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

WILLAMETTE WATERSHEDS

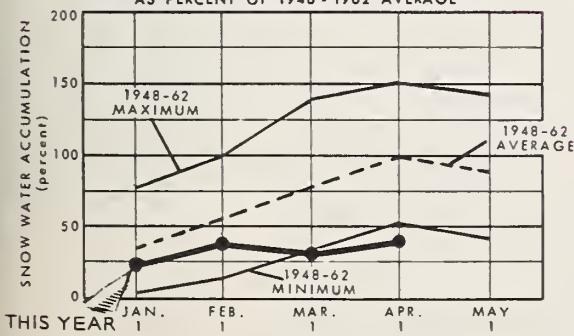
LEGEND

- Watershed Boundary
- - Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- ⚡ Radio Telemetry
- ◆ Precipitation Gage
- Temperature Gage



SNOW WATER ACCUMULATION IN AREA 8

AS PERCENT OF 1948-1962 AVERAGE



Data from selected snow courses.
Measured about the first of each month

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek	Fair	Poor
Applegate River, Big	Average	Fair
Applegate River, Little	Average	Fair
Ashland Creek	Average	Fair
Butte Creek, Big	Average	Fair
Butte Creek, Little	Average	Fair
Cow Creek	Fair	Poor
Deer Creek	Fair	Poor
Elk Creek	Average	Fair
Emigrant Creek (abv. Res.)	Fair	Poor
Evans Creek	Fair	Poor
Gold Hill Irrigation Dist.	Average	Fair
Grants Pass Irrig. Dist.	Average	Fair
Grave Creek	Fair	Poor
Illinois River, East Fork	Average	Fair
Illinois River, West Fork	Average	Fair
Jump-off-Joe Creek	Fair	Poor
Neil Creek	Average	Fair
Red Blanket Creek	Average	Fair
Rogue River	Average	Fair
Sucker Creek	Average	Fair
Table Rock Irrig. Dist.	Average	Fair
Thompson Creek	Average	Fair
Wagner Creek	Average	Fair
Williams Creek	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

April 1, 1968

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Emigrant Gap	39.0	31.0	38.8	35.0*
Fish Lake	7.8	3.9	4.3**	5.7
Fourmile Lake	16.1	3.5	5.5**	9.5
Howard Prairie	60.0	41.5	37.7	--
Hyatt Prairie	16.1	10.8	12.7	9.4

*Average for years
of record after
reconstruction.

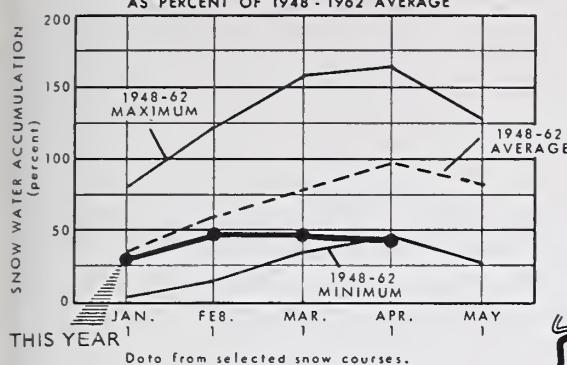
**March 23

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of April 1, 1968

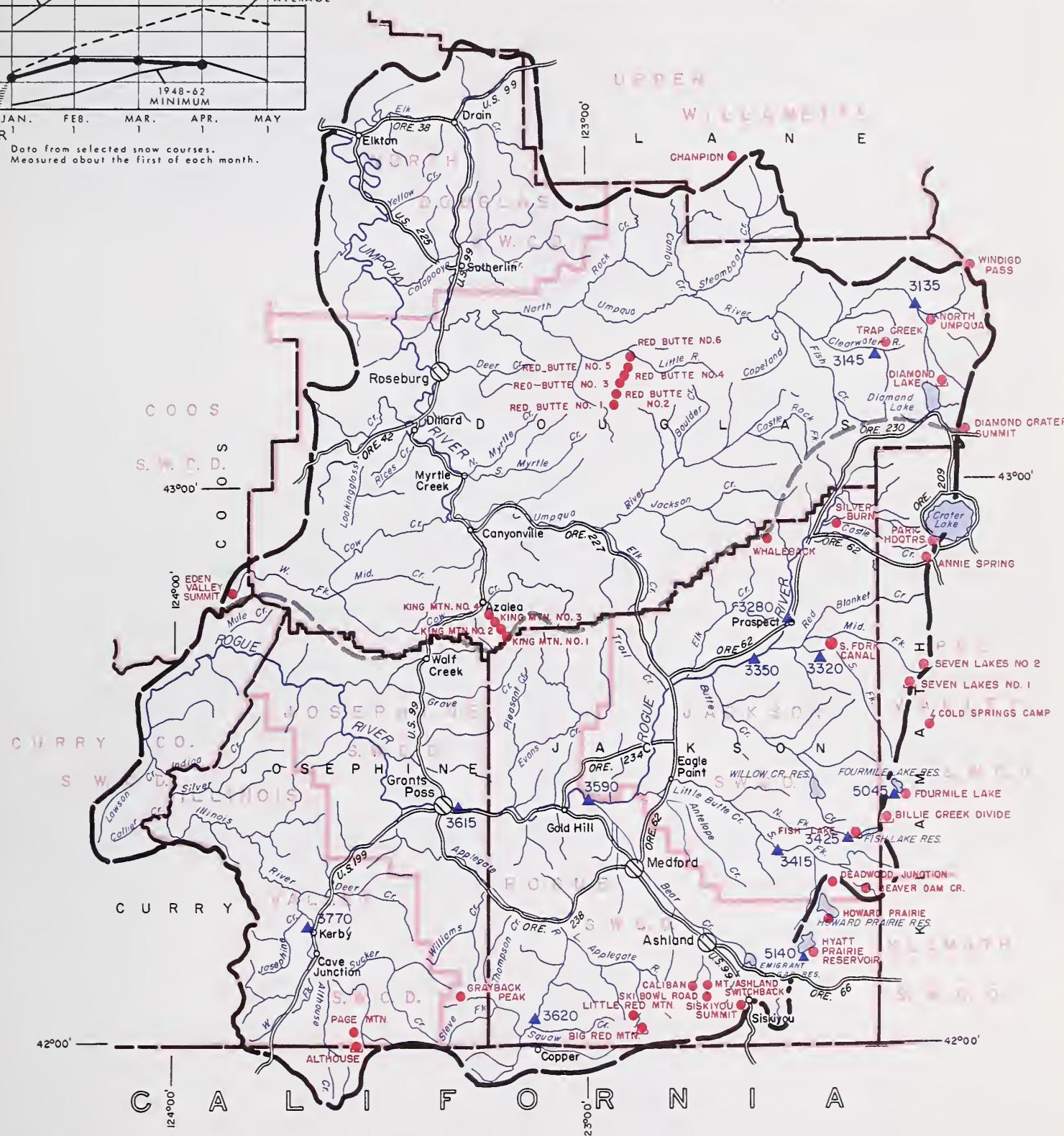
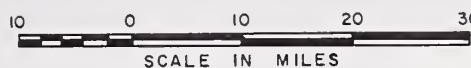
NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ⁱ
3620	Applegate near Copper	105	April-Sept.	142	74
3145	Clearwater above Trap Creek ^d	55	April-Sept.	75	73
5045	Fourmile Lake net Inflow ^d	2.8	April-Sept.	5.4	52
5140	Hyatt Reservoir net Inflow ^d	2.1	April-Sept.	5.8	36
3771	Illinois River near Kerby	156	April-July	206	76
		160	April-Sept.	212	75
3425	Little Butte, N. Fk. at Fish Lk. nr. Lake Cr. ^d	9.5	April-Sept.	16.0	59
3415	Little Butte, So. Fk. nr. Lake Creek	17.0	April-July	38	45
	Note: Minimum flow will drop to 100 c.f.s. by May 9th.				
3280	Rogue above Prospect	200	April-July	295	68
		250	April-Sept.	355	70
3320	Rogue, South Fork near Prospect ^d	45	April-July	70	64
		55	April-Sept.	82	67
3350	Rogue River below South Fork	390	April-July	611	64
		490	April-Sept.	754	65
3590	Rogue at Raygold near Central Point	530	April-July	837	63
		650	April-Sept.	1001	65
3615	Rogue at Grants Pass	625	April-Sept.	993	63
3135	Umpqua, No. blw. Lemolo Res. nr. Toketee Falls ^d	130	April-Sept.	186	70

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

ROGUE, UMPQUA WATERSHEDS



Data from selected snow courses.
Measured about the first of each month



LEGEND

- A legend containing eight entries, each with a symbol followed by a label:

 - Watershed Boundary: A thick black line.
 - Sub-watershed Boundary: A dashed black line.
 - Soil Conservation District Bdry: A thick pink line.
 - County Boundary: A thin black line.
 - Forecast Point: A blue triangle symbol.
 - Snow Course: A red circle symbol.
 - Precipitation Gage: A yellow square symbol.
 - Radio Telemetry: A red diagonal slash symbol.

Rogue, Umpqua Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	LAST YEAR
Althouse	4530	3/29	0	0.0	8.2	7.2
Annie Spring	6018	3/29	75	30.0	50.0	49.7
Beaver Dam Creek	5100	3/30	6	2.3	13.6	--
Big Red Mountain	6500	3/26	65	25.0	34.1	32.6
Billie Creek Divide	5300	3/25	23	8.1	21.8	25.4
Caliban	6500	3/28	78	31.7	39.0	--
Champion	4500	4/1	24	11.9	31.8	33.8
Cold Springs Camp	6100	3/29	44	18.6	32.8	--
Deadwood Junction	4600	3/30	0	0.0	10.3	--
Diamond-Crater Summit	5800	3/20	54	20.5	34.8	--
Diamond Lake	5315	3/20	34	12.6	20.0	26.6
Fish Lake	4865	b				
Fourmile Lake	6000	b				
Grayback Peak	6000	3/25	46	15.9	29.4	30.5
Howard Prairie	4500	3/30	0	0.0	9.2	--
Hyatt Prairie Reservoir	4900	3/20	0	0.0	7.6	9.6 ^h
King Mountain #1	4500	3/25	7	2.1	--	--
King Mountain #2	4000	3/25	2	0.5	--	--
King Mountain #3	3648	3/25	0	0.0	--	--
King Mountain #4	3049	3/25	0	0.0	--	--
King Mountain #5	2380	3/25	0	0.0	--	--
King Mountain #6	1820	3/25	0	0.0	--	--
Little Red Mountain	6500	3/26	50	16.9	27.9	26.3
Mt. Ashland Switchback	6400	3/28	81	33.8	36.0	--
North Umpqua	4215	3/29	3	1.3	15.5	16.4
Page Mountain	4045	3/29	0	0.0	2.6	4.9 ^h
Park Headquarters	6450	3/29	97	40.2	60.7	62.1
Red Butte #1	4560	3/22	16	4.8	19.2	--
Red Butte #2	4000	3/22	3	2.0	5.2	--
Red Butte #3	3500	3/22	0	0.0	0.0	--
Red Butte #4	3000	3/22	0	0.0	0.0	--
Red Butte #5	2500	3/22	0	0.0	0.0	--
Red Butte #6	2000	3/22	0	0.0	0.0	--
Seven Lakes #1	6800	3/27	73	30.9	59.6	64.3 ^h
Seven Lakes #2	6200	3/27	60	24.8	40.8	47.2
Silver Burn	3720	3/29	0	0.0	15.1	13.9
Siskiyou Summit	4630	3/30	0	0.0	2.9	3.6
Ski Bowl Road	6000	3/28	61	27.0	31.8	--
South Fork Canal	3500	3/29	0	0.0	0.0	1.2
Trap Creek	3800	3/29	0	0.0	15.9	11.8 ^h
Whaleback	5140	3/28	56	23.8	33.8	38.6
Windigo Pass	5800	3/27	60	22.7	38.4	48.7

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK KLAMATH WATERSHEDS OREGON

as of

APRIL 1, 1968

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

Klamath County farmers, ranchers and other water users can expect far below average water supplies this coming summer except where reservoired water is available and adequate.

SNOW COVER

Low elevation snow is now completely gone with snow remaining only at the higher elevations. Snow cover for Klamath County is only 42 percent of average.

SOIL MOISTURE and PRECIPITATION

Mountain soils remain wetted which will help any subsequent significant rainfall contribute directly to streamflow. According to U.S. Weather Bureau precipitation for November-March has been 67 percent of average. March precipitation was 41 percent of average.

RESERVOIR STORAGE

Storage in Upper Klamath Lake is 479,400 acre feet--slightly more than average. Gerber is holding 60,600 a.f. and Clear Lake contains 219,200 acre feet. Lands served from these reservoirs will have an adequate supply.

STREAMFLOW

Klamath County streams are forecast to flow as follows:

<u>Stream Station</u>	<u>Period</u>	<u>Acre Feet</u>	<u>Percent Average</u>
Clear Lake Inflow	April-Sept.	20,000	42
Gerber Inflow	April-Sept.	5,500	24
Sprague R. near Chiloquin	April-Sept.	150,000	52
Upper Klamath Inflow	April-Sept.	375,000	59
Williamson below Sprague	April-Sept.	277,000	56

Report prepared by

W.T. FROST AND TOM GEORGE

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1968

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley	Fair	Poor
Lost River (Clear Lake)	Average	Average
Lost River (Gerber)	Average	Average
Lost River (Willow Res.)	Fair	Fair
Sprague River	Fair	Poor
Upper Klamath Lake	Average	Average
Williamson River	Fair	Poor

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Clear Lake	440.2	219.2	219.2	235.5
Gerber	94.0	60.6	61.1	49.4
Upper Klamath Lake	584.0	479.4	465.4	461.8

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

as of April 1, 1968

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ⁱ
NO.	NAME				
823	Clear Lake Reservoir Inflow ^k	16	April-June	44	36
		20	April-Sept.	48	42
8215	Gerber Reservoir Inflow ^k	5.3	April-June	22	24
		5.5	April-Sept.	23	24
5010	Sprague near Chiloquin	138	April-July	256	54
5070	Upper Klamath Lake net Inflow ^k	150	April-Sept.	289	52
		316	April-July	527	60
		375	April-Sept.	639	59
5025	Williamson below Sprague River	277	April-Sept.	490	56

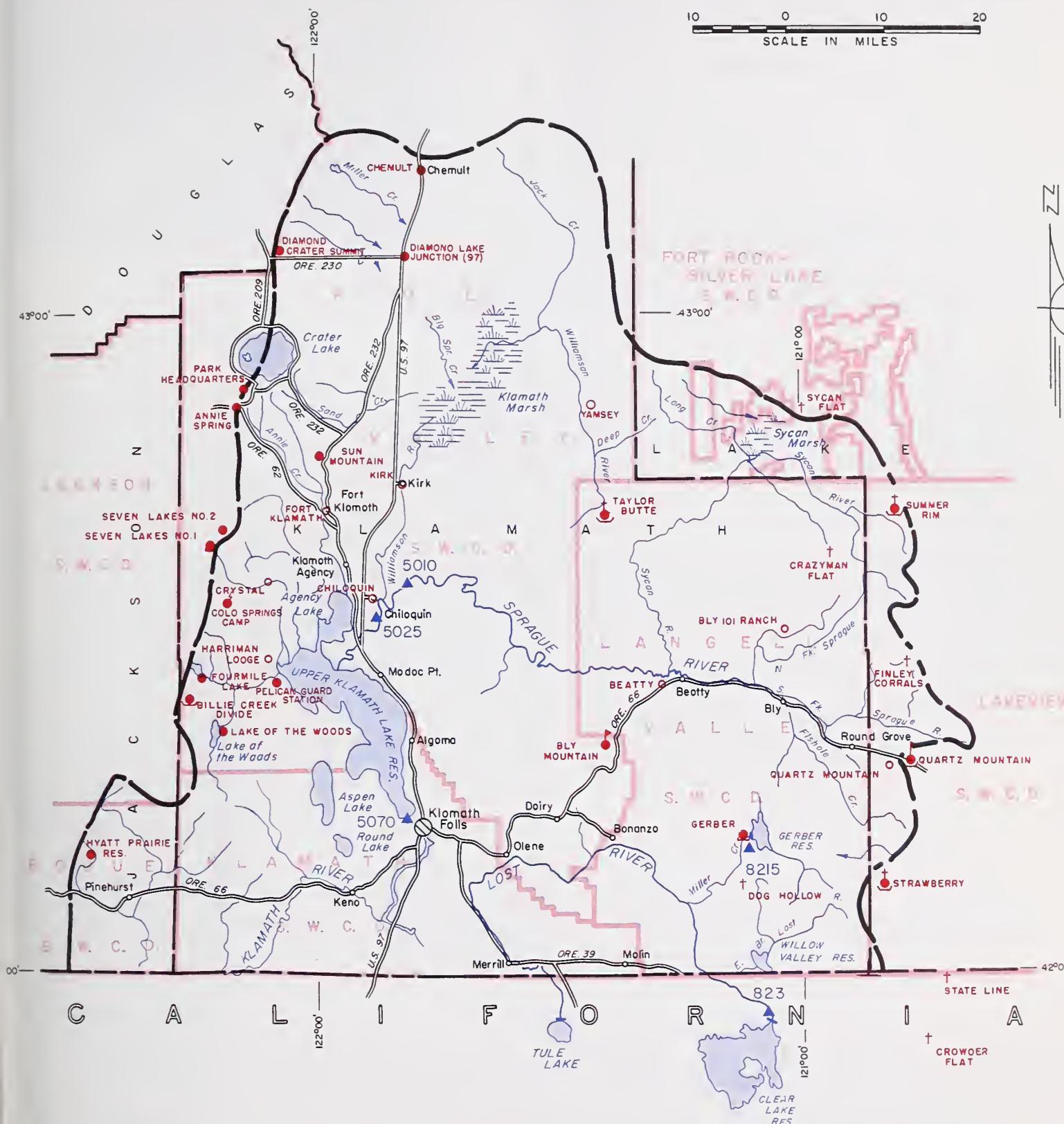
SOIL MOISTURE

STATION	PROFILE (Inches)			SOIL MOISTURE (Inches)			
	NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR
Bly Mountain		5090	42	14.0	3/22	11.7	11.7
							12.2

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

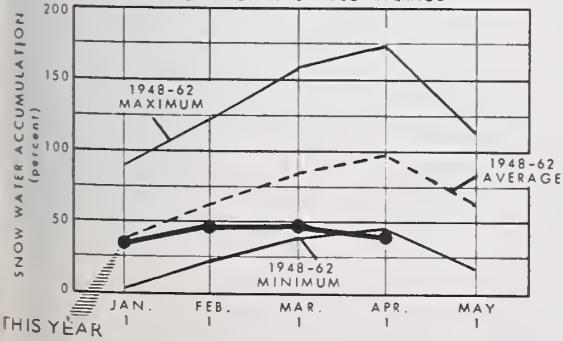
KLAMATH WATERSHEDS

10 0 10 20
SCALE IN MILES



SNOW WATER ACCUMULATION IN AREA 10

AS PERCENT OF 1948 - 1962 AVERAGE



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- COPCO Snow Station
- Soil Moisture Station
- Precipitation Gage
- Radio Telemetry

Klamath Watersheds

SNOW

SNOW COURSE		DATE OF SURVEY	CURRENT INFORMATION		PAST RECORD	
NAME	ELEVATION		SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1948-62 AVERAGE
Annie Spring	6018	3/29	75	30.0	50.0	49.7
Beatty (PP&L)	4300	b				
Billie Creek Divide	5300	3/25	23	8.1	21.8	25.4
Bly Mountain	5090	3/22	0	0.0	8.1	3.9 ^m
Bly 101 Ranch (PP&L)	4800	b				
Chemult	4760	3/28	2	0.9	9.9	10.5
Chiloquin (PP&L)	4187	b				
Cold Springs Camp	6100	3/29	44	18.6	32.8	--
Crazyman Flat ^e	6100	3/27	9	3.4	10.2	10.3 ^m
Crowder Flat ^e (Calif.)	5200	3/27	0	0.0	0.7	0.6 ^m
Crystal (PP&L)	4200	3/30	0	0.0	7.8	7.2
Diamond-Crater Summit	5800	3/20	54	20.5	34.8	--
Diamond Lake Junction (97)	4600	3/20	0	0.0	5.5	--
Dog Hollow ^e	4900	3/27	0	0.0	0.0	0.0 ^m
Finley Corrals ^e	6000	3/27	14	5.3	12.2	16.9 ^m
Fort Klamath (PP&L)	4150	3/30	0	0.0	0.0	1.2
Fourmile Lake	6000	b				
Gerber	4850	3/27	0	0.0	--	0.8 ^h
Harriman (PP&L)	4200	3/31	0	0.0	0.0	1.1 ^m
Hyatt Prairie Reservoir	4900	3/30	0	0.0	7.6	9.6 ^h
Kirk (PP&L)	4533	3/31	0	0.0	--	2.1 ^m
Lake of the Woods	4960	3/29	9	3.3	7.2	12.4
Park Headquarters	6450	3/29	97	40.2	60.7	62.1
Pelican Guard Station	4150	3/25	0	0.0	0.2	--
Quartz Mountain	5320	3/28	0	0.0	7.8	5.7
Quartz Mountain (PP&L)	5504	3/28	6	3.0	9.8	6.1
Seven Lakes #1	6800	3/27	73	30.9	59.6	64.3 ^h
Seven Lakes #2	6200	3/27	60	24.8	40.8	47.2
State Line ^e (Calif.)	5750	3/27	0	0.0	7.1	9.9 ^m
Strawberry	5760	3/28	4	2.3	9.4	8.0
Summer Rim	7200	3/29	28	11.3	20.0	19.6
Sun Mountain	5350	3/21	36	13.9	24.7	28.6
Sycan Flat ^e	5500	3/27	0	0.0	8.3	4.6 ^m
Taylor Butte	5100	3/26	0	0.0	6.9	4.5 ^h
Yamsey (PP&L)	4600	b				

WATER SUPPLY OUTLOOK LAKE COUNTY, GOOSE LAKE WATERSHEDS OREGON

as of

APRIL 1, 1968

**U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER**

GENERAL OUTLOOK

Extremely poor streamflow is forecast for the summer of 1968 in Lake County and most ranchers and other water users can expect extreme water shortages. The Lakeview Water Users, with stored water available, will have a satisfactory irrigation season but there will be little or no water left for carryover to next season which might also be on the dry side.

SNOW COVER

Water content of the very scanty snowpack has decreased to 32 percent of the 15-year April first average (1948-62). Snow levels are very close to the record-low figures.

PRECIPITATION and SOIL MOISTURE

Winter precipitation, November through March, has been only 68 percent of the 15-year average according to the U. S. Weather Bureau. March precipitation was only 36 percent of the average. Upper watershed soils gained additional moisture and are now wet to 71 percent of capacity.

RESERVOIR STORAGE

Drews reservoir held 47,700 acre feet on April first compared with 39,400 the previous year. Inflow to the reservoir is expected to be about 7,000 a.f. in the next few months. Cottonwood held 3,200 acre feet compared with 2,600 acre feet last year. Thompson Valley reservoir held 14,600 a.f. on March first and probably has increased in level since then.

STREAMFLOW

The following forecasts of streamflow in Lake County assume that near average conditions of temperature and precipitation will prevail in the forecast period:

<u>Stream Station</u>	<u>Period</u>	<u>Acre Feet</u>	<u>Percent Average</u>
Silver Creek - Silver Lake	April-July	7,500	39
Chewaucan - Paisley	April-June	43,000	54
Honey Creek - Plush	April-June	3,400	22
Deep Creek - Adel	April-June	27,000	40
Twenty-mile Cr. - Adel	April-June	5,000	24
Drews Reservoir Inflow	April-July	7,000	20

Most other streams have already completed their flows or will cease to flow very shortly.

Report prepared by

W.T. FROST AND TOM GEORGE

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan	Fair	Poor
Crooked Creek	Poor	Poor
Deep Creek	Poor	Poor
Dry Creek	Poor	Poor
East Side Goose Lake	Poor	Poor
Guano Lake	Poor	Poor
Honey Creek	Poor	Poor
Lakeview Water Users Assn.	Average	Average
Rock Creek (Hart Mtn.)	Poor	Poor
Silver-Buck Creeks	Poor	Poor
Summer Lake	Poor	Poor
Thomas Creek	Poor	Poor
Twentymile Creek	Poor	Poor
Warner Lakes	Poor	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.)

April 1, 1968

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Cottonwood	8.7	3.2	2.6**	4.3*
Drews	63.0	47.7	39.4**	44.1
Thompson Valley	17.4	b	14.1	11.4 ^m

*Average for years
of record after
reconstruction.

**March 22, 1967

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of April 1, 1968

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE		THIS YEAR AS PERCENT OF AVERAGE ⁱ
				FORECAST THIS YEAR	1948-62 AVERAGE	
3840	Chewaucan near Paisley	43 48	April-June April-Sept.	79 88	54	54
3715	Deep above Adel	27 29	April-June April-Sept.	68 72	40	40
3385	Drews Reservoir net Inflow ^d	7.0 7.2	April-July April-Sept.	35 35	20	20
3785	Honey near Plush	3.4 3.6	April-June April-Sept.	15.6 16.1	22	22
3900	Silver Creek near Silver Lake	7.5 8.5	April-July April-Sept.	19.1 21	39	40
3660	Twentymile near Adel	5.0 5.5	April-June April-Sept.	21 22	24	25

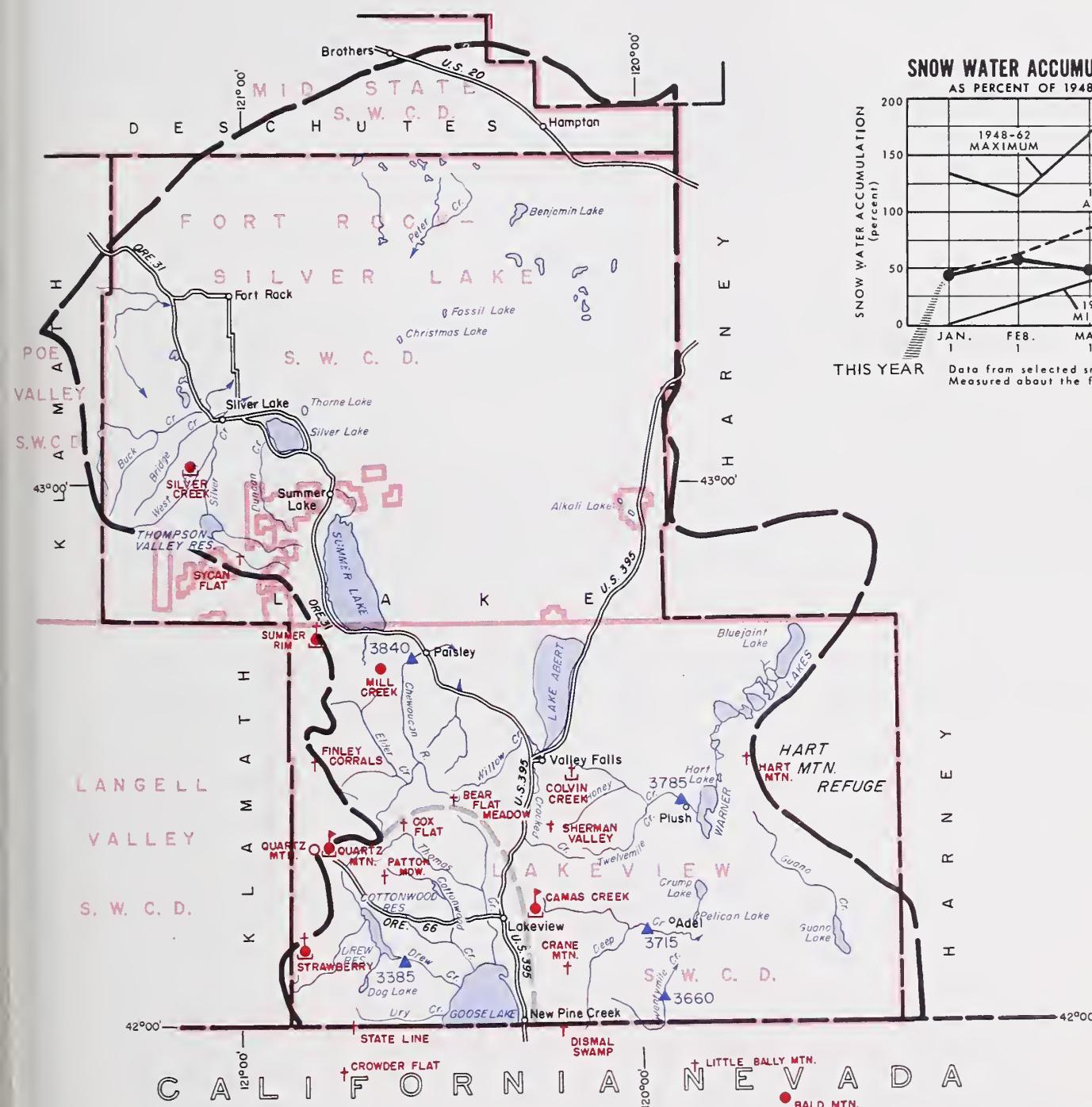
SOIL MOISTURE

STATION NAME	PROFILE (Inches)		SOIL MOISTURE (Inches)			
	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Camas Creek	5720	42	14.5	3/28	12.9	12.8
Quartz Mountain	5320	48	15.3	3/28	8.2	9.3

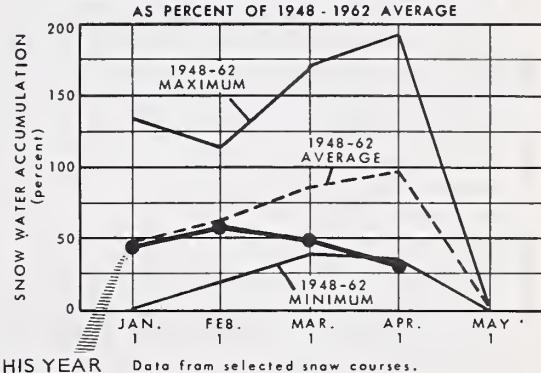
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

LAKE COUNTY, GOOSE LAKE WATERSHEDS

10 0 10 20 30
SCALE IN MILES



SNOW WATER ACCUMULATION IN AREA 11



THIS YEAR

Data from selected snow courses.
Measured about the first of each month.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley	Poor	Poor
Cow Creek	Poor	Poor
Donner und Blitzen River	Poor	Poor
Mill-Coffeepot Creeks	Poor	Poor
Rattlesnake Creek	Poor	Poor
Silver Creek	Poor	Poor
Silvies River	Poor	Poor
Soldier-Prather Creek	Poor	Poor
Trout Creek	Poor	Poor
Whitehorse Creek	Poor	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1968

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of April 1, 1968

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE		THIS YEAR AS PERCENT OF AVERAGE ⁱ
				1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ⁱ	
3960	Donner und Blitzen near Frenchglen	15	April-June	52	29	
		18	April-Sept.	62	29	
4030	Silver near Riley	3.2	April-July	22	14	
3935	Silvies near Burns	18	April-June	96	19	
		20	April-Sept.	99	20	
4065	Trout near Denio	2.7	April-June	7.4	36	
		3.0	April-Sept.	8.4	36	

SOIL MOISTURE

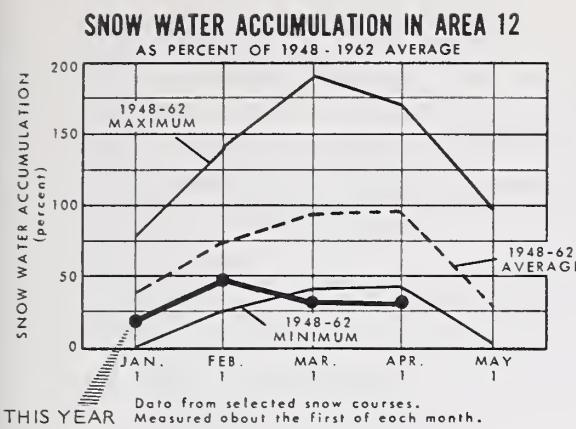
STATION	PROFILE (Inches)			SOIL MOISTURE (Inches)		
	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION					
Blue Mountain Spring	5900	42	16.9	3/28	12.6	11.8
Fish Creek	7900	48	15.0	3/29	10.5	--
Folly Farm	4450	30	12.5	c		10.4
Silvies	6900	48	16.4	3/29	13.7	14.5
Snow Mountain	6300	48	16.7	4/1	12.2	15.5
Starr Ridge	5150	36	10.6	3/28	10.5	10.5
Stinking Water	4800	48	21.9	b	--	21.4
Willow-Bald	5000	24	6.6	4/1	4.4	3.8 f

SNOW

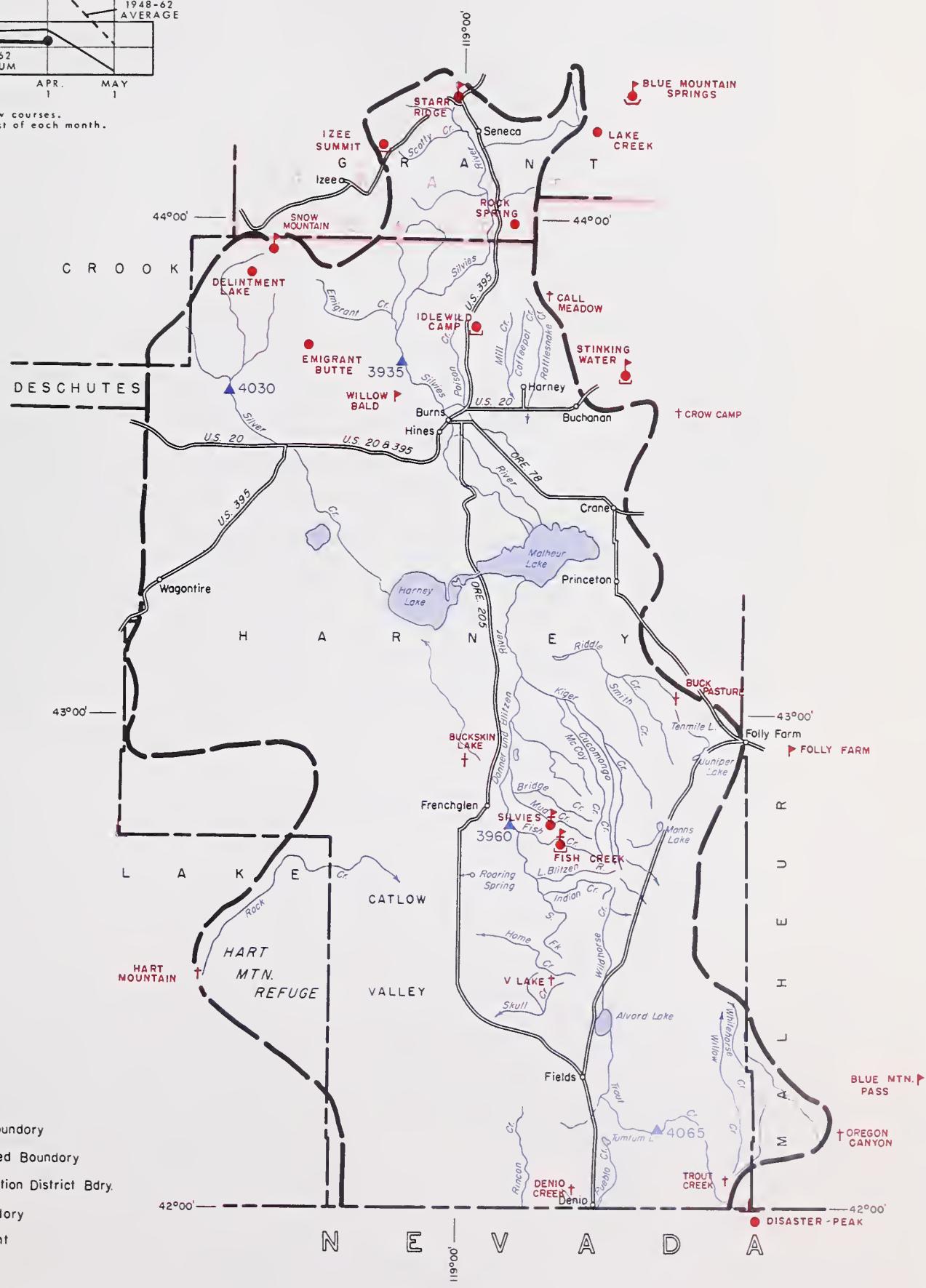
SNOW COURSE	CURRENT INFORMATION			PAST RECORD	
	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME				LAST YEAR	1948-62 AVERAGE
Blue Mountain Springs	5900	3/28	23	8.8	16.4
Buck Pasture ^e	5700	3/29	0	0.0	0.0
Buckskin Lake ^e	5200	3/29	0	0.0	0.0
Call Meadows ^e	5340	3/29	0	0.0	1.4
Crow Camp ^e	5500	3/29	0	0.0	T
Delintment Lake	5600	4/1	0	0.0	7.0
Denio Creek ^e	6000	3/29	0	0.0	0.0
Disaster Peak (Nev.)	6500	3/25	4	1.2	10.6
Emigrant Butte	5000	4/1	0	0.0	3.4
Fish Creek	7900	3/29	42	15.2	26.6
Hart Mountain ^e	6350	3/27	0	0.0	0.3
Idlewild Camp	5200	3/29	0	0.0	7.8
Izee Summit	5293	3/28	0	0.0	7.0
Lake Creek	5120	3/28	7	2.2	10.1
Martin Creek (Nev.)	6700	3/27	13	4.8	12.3
Oregon Canyon ^e	6950	3/29	0	0.0	7.0
Rock Spring	5100	3/29	T	T	5.0
Silvies	6900	3/29	5	2.5	16.4
Snow Mountain	6300	4/1	9	3.2	15.6
Starr Ridge	5150	3/28	0	0.0	4.2
Stinking Water	4800	4/1	0	0.0	T
Trout Creek ^e	7800	3/29	6	2.4	12.6
"V" Lake ^e	6600	3/29	0	0.0	3.2

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

HARNEY BASIN WATERSHEDS

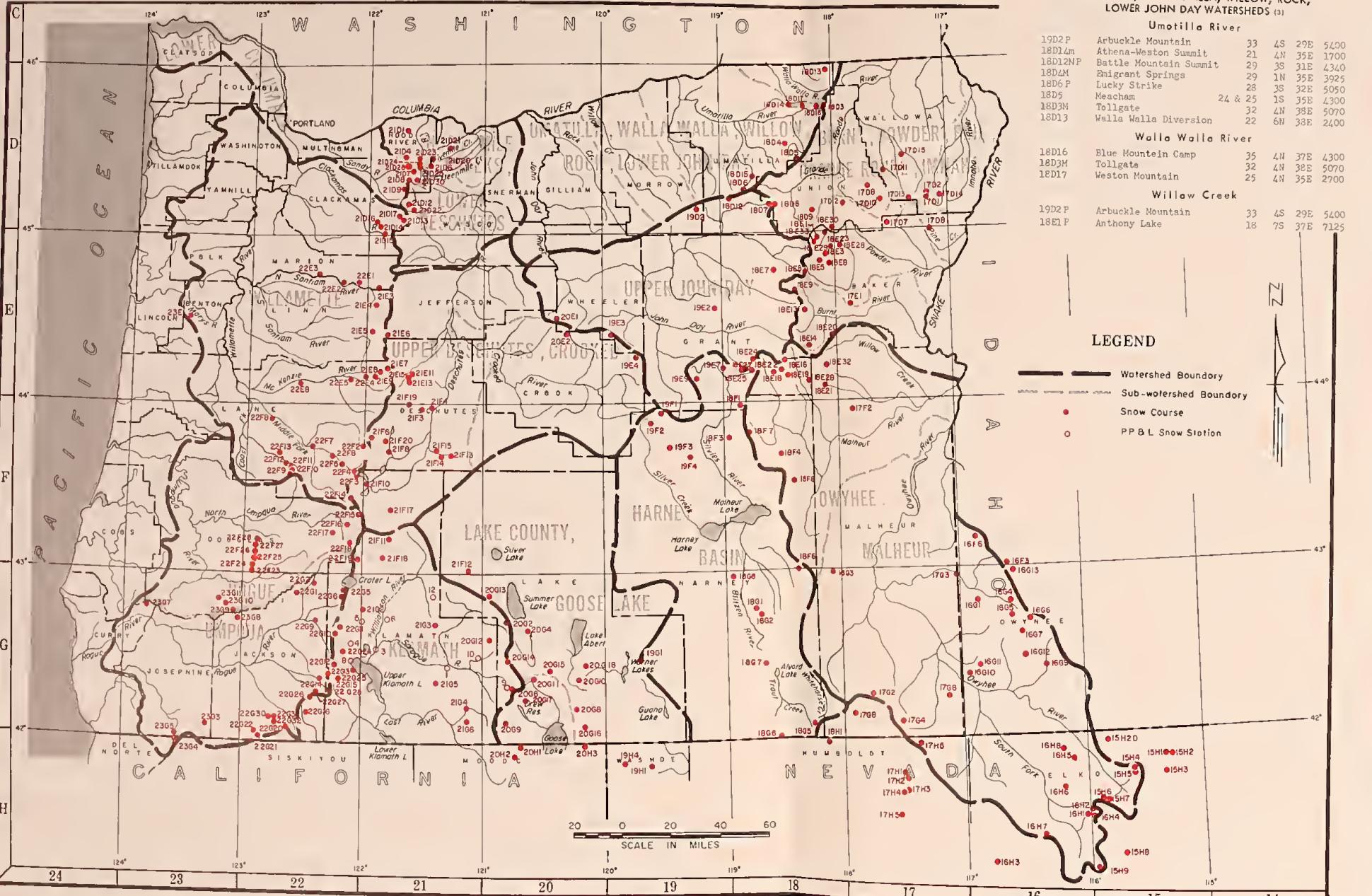


10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- - - Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- † Aerial Snow Depth Gage
- Soil Moisture Station
- Precipitation Gage



Map and Index to

REGON SNOW COURSES

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

Idaho Cooperative Snow Surveys
Nevada Cooperative Snow Surveys
Oregon State University
Oregon State Engineer and Corps of State Watermasters
Oregon State Highway Engineers
Soil and Water Conservation Districts of Oregon

COUNTY

Douglas County Water Resources Survey

FEDERAL

Department of Agriculture
Cooperative Extension Service
Forest Service
Soil Conservation Service
Department of Commerce
Weather Bureau
Department of the Interior
Bonneville Power Administration
Bureau of Land Management
Bureau of Reclamation
Fish and Wildlife Service
Geological Survey
National Park Service
Department of National Defense
Corps of Army Engineers

PUBLIC UTILITIES

Pacific Power and Light Company
Portland General Electric Company
California-Pacific Utilities Company

MUNICIPALITIES

City of Baker
City of La Grande
City of The Dalles
City of Walla Walla

IRRIGATION DISTRICTS

Arnold Irrigation District
Associated Ditch Companies
Burnt River Irrigation District
Central Oregon Irrigation District
East Fork Irrigation District
Grants Pass Irrigation District
Hood River Irrigation District
Jordan Valley Irrigation District
Juniper Flat Irrigation District
Lakeview Water Users, Incorporated
Medford Irrigation District
Middle Fork Irrigation District
North Board of Control - Owyhee Project
North Unit Irrigation District
Ochoco Irrigation District
Rogue River Valley Irrigation District
South Board of Control - Owyhee Project
Squaw Creek Irrigation District
Talent Irrigation District
Tumalo Project
Vale-Oregon Irrigation District
Warmsprings Irrigation District

PRIVATE ORGANIZATIONS

Amalgamated Sugar Company
The Crag Rats, Hood River, Oregon

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

OFFICIAL BUSINESS

U. S. DEPARTMENT OF AGRICULTURE
POSTAGE AND FEES PAID

FIRST CLASS MAIL

FEDERAL - STATE - PRIVATE
COOPERATIVE SNOW SURVEYS

Furnishes the basic data
necessary for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

—
“The Conservation of Water begins
with the Snow Survey”